

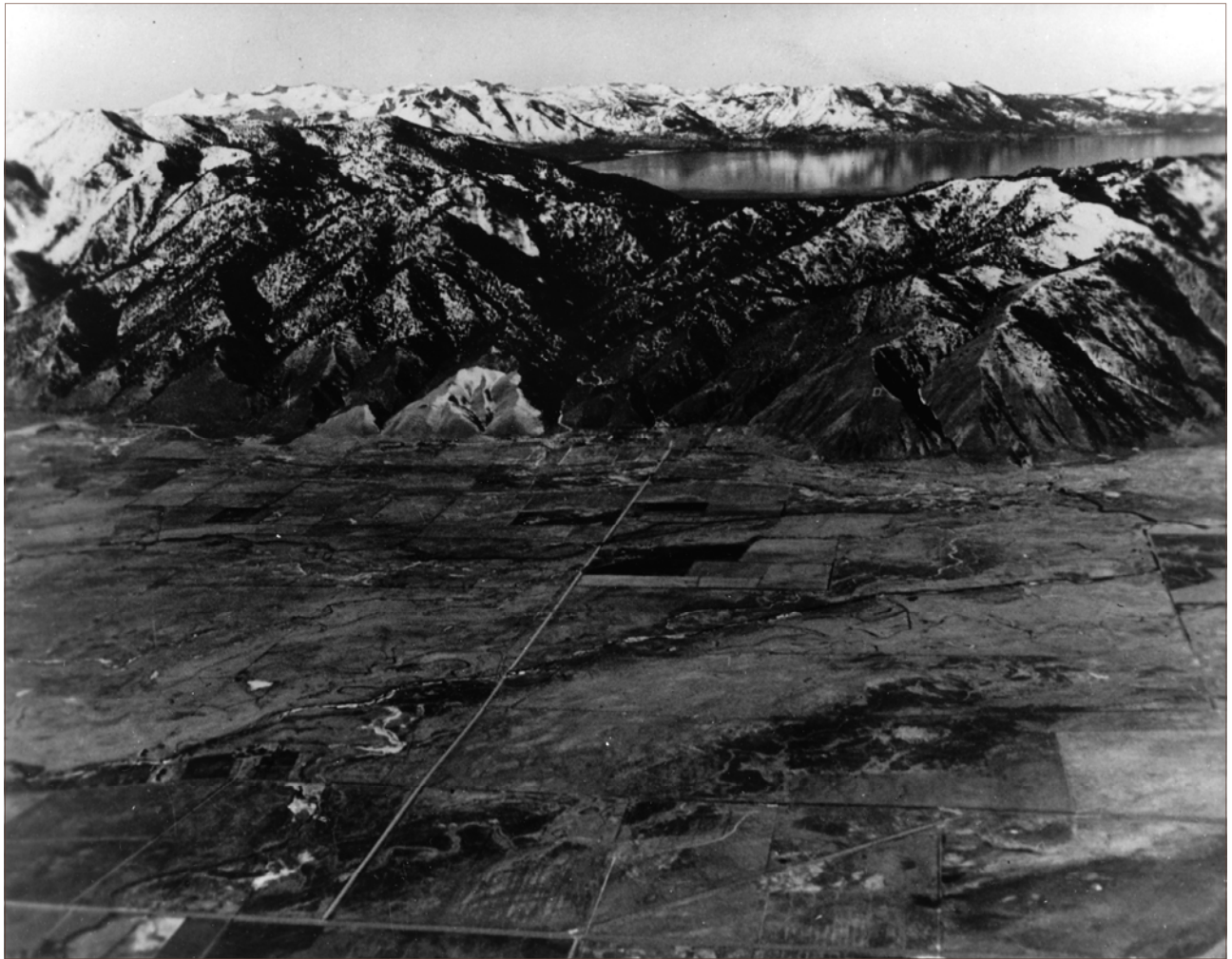
*We had heard a world of talk
about the marvelous beauty of
Lake Tahoe,
and finally curiosity drove us
thither to see it.....*

Mark Twain, 1862

The Emergency California-Nevada Tahoe Basin Fire Commission Report

May 2008

The Emergency California-Nevada Tahoe Basin Fire Commission Report



....at last the lake burst upon us—a noble sheet of blue water lifted six thousand three hundred feet above the level of the sea, and walled in by a rim of snow-clad mountain peaks that towered aloft a full three thousand feet higher still! As it lay there with the shadows of the mountains brilliantly photographed upon its still surface, I thought it must surely be the fairest picture the whole earth affords...

From Mark Twain's "Roughing it" written in 1862 when he was 27

Cover: Lake Tahoe photographic shoreline survey, 1916
Above: Aerial photograph of Lake Tahoe and the Carson Valley

Photos courtesy of the Special Collections Department, University of Nevada, Reno Library



Glenbrook Bay, circa 1940

The Emergency California-Nevada Tahoe Basin Fire Commission Report

presented to

Arnold Schwarzenegger, Governor
State of California

Jim Gibbons, Governor
State of Nevada

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Acknowledgements

The California-Nevada Tahoe Basin Fire Commissioners wish to acknowledge the cooperative efforts and staff support that made our work possible. The level of commitment, dedication, and excellence was extraordinary. Bi-State collaboration assured compliance with open meeting policies; facility, logistical, and operational support, and committee needs were met and exceeded expectations. We extend our sincere appreciation to all who supported and participated in this endeavor to keep a safe and clean environment for the citizens of California and Nevada, so all may continue to enjoy the beauty and magnificence of the Lake Tahoe Basin. Thank you one and all:

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California Tahoe Conservancy

Lahontan Regional Water Quality Control Board
Lake Tahoe Community College
Lake Tahoe Resource Conservation District

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Sierra Nevada College
Tahoe Basin Fire Districts
Tahoe Regional Planning Agency
University of Nevada
USDA Forest Service

...and the citizens of the Lake Tahoe Basin

Contents

Creating the Commission: Governors' Memorandum of Understanding	1
The Commissioners' Challenge.....	3
Executive Summary.....	6
The Action Plan.....	11
In the Aftermath of Disaster	12
The Community Speaks	13
The Commission Responds	15
Collaborative Solutions	18
Key Issues and Next Steps	23
Findings	25
Environmental Protection	26
Issues of Governance	30
Community and Homeowner Fire Prevention	41
Forest and Fuels Management	45
Fire Suppression	63
Funding	67
Recommendations.....	73
Environmental Protection	74
Issues of Governance	76
Community and Homeowner Fire Prevention	90
Forest and Fuels Management	95
Fire Suppression	104
Funding	106
Appendices.....	111
A. Governors' Press Releases Establishing the Commission	112
B. Commissioners' Biographies	114
C. Process and Template for Proposing Findings and Recommendations	119
D. Submitted Findings and Recommendations as Adopted by the Commission	121
E. Implementation Schedule	226
F. Costs Summary	231
G. Maps	234
H. Glossary of Acronyms	238



Creating the Commission

Memorandum of Understanding

WHEREAS on June 24, 2007, the Angora Fire began in the North Upper Truckee area in South Lake Tahoe, California. The fire burned out of control, threatening hundreds of residences and commercial structures, and resulted in thousands of evacuations. A total of 3,100 acres were burned and 254 homes were destroyed by this fire.

WHEREAS El Dorado County proclaimed a local emergency June 24, 2007, and subsequently requested state and federal assistance by a separate proclamation issued the next day. In response to El Dorado County's request, California Governor Arnold Schwarzenegger proclaimed a State of Emergency for this event on June 25, 2007. The Angora Fire was fully contained on July 2, 2007.

WHEREAS the Angora Fire has underscored the need for a comprehensive review of fire prevention and fuels management practices in the Lake Tahoe Basin, and on July 5, 2007, Nevada Governor Jim Gibbons publicly invited California Governor Arnold Schwarzenegger to join him in establishing a joint fire commission to review fuels

management of forests in the Tahoe Basin as well as the policies and procedures of the various agencies that govern fuels management within the Basin.

WHEREAS the States of California and Nevada are committed to reducing the threat of wildfires while preserving the unique and treasured environment of the Tahoe region.

NOW, THEREFORE, California and Nevada hereby agree as follows:

1. The California-Nevada Tahoe Basin Fire Commission (Commission) is hereby created.
2. Voting members of the Commission:
 1. The Governors of California and Nevada shall each appoint eight voting members within the Tahoe Basin, including, but not limited to, representatives from affected state agencies, fire agencies, and the public.
 2. The Governors of California and Nevada hereby request that the Secretary of the United States Department of Agriculture designate one person from the United States Forest Service to serve as a voting member of the Commission.
3. Three non-voting members of the Commission:
 1. The Governors of California and Nevada may each appoint a maximum of three non-voting ex-officio members to ensure that Tahoe Basin issues, as well as respective State issues, are represented.
4. Commission members shall serve without compensation, but may receive reimbursement of expenses by their respective States. Members shall serve at the pleasure of their respective appointing authorities.



Timothy D. Rains

Fallen Leaf Lake, June 24, 2007

Between the State of California and the State of Nevada

5. The Governor of California and the Governor of Nevada shall each designate one member from their respective appointees to serve as co-chair of the Commission.
6. California and Nevada will provide resources and staffing to the Commission on a substantially equal basis.
7. The Commission shall perform a comprehensive review of the laws, policies, and practices that affect the vulnerability of the Tahoe Basin to wildfires and/or that pertain to fire prevention and fuels management in the Basin. The Commission shall study and consider various approaches to reducing identified vulnerabilities, and shall submit findings and recommendations to the Governors of California and Nevada by March 21, 2008. These findings and recommendations shall:
 1. Identify the wildfire suppression and fuels management practices that are currently used in the Tahoe Basin, and evaluate the effectiveness of those practices;
 2. Recommend improvements and changes that will reduce the Tahoe Basin's wildfire vulnerability while protecting the environment; and
 3. Recommend ways to effectively educate homeowners and other members of the public on appropriate fuel-reduction and fire-protection measures that they can take.
8. The Commission shall meet as appropriate to fulfill its functions, and shall comply with the open meetings laws of both California and Nevada. In the event of a conflict between these laws, the Commission shall comply with the law that provides the greater right of public access.
9. The Commission may create committees to carry out its mission. Each committee may be comprised of Commission members (including ex-officio members) and a maximum of three individuals who are not members of the Commission.
10. The Commission shall disband 60 days after delivering its findings and recommendations.
11. This Memorandum of Understanding is not intended to be legally binding or to impose legal obligations on California or Nevada and will have no legal effect. Neither California nor Nevada is responsible for the actions of third parties or associates who may be involved in activities outlined in this Memorandum of Understanding.



Sacramento Bee/Hector Amezcua

Remains of a home destroyed by the Angora Fire in the Shoshone Community of South Lake Tahoe

The Commissioners' Challenge

The Challenge: It was just a matter of time before a catastrophic fire torched the landscape of the Lake Tahoe Basin. Fire has always been embedded in the western environment, but with increasing frequency in recent years it has exploded beyond its natural ecological role to burn wildlands, communities, and destroy lives. Lake Tahoe's moment arrived on the windy, dry afternoon of June 24, 2007. By nightfall the Angora Fire had burned 254 homes and 3,100 acres of forested land near South Lake Tahoe. The fire burned for another few days before it was contained, but most of the damage occurred in one conflagration afternoon and evening. The destruction was devastating, but thankfully, no lives were lost. Many fire experts stated that if the winds had kept blowing through that first night, the fire would have run up the west side of the Lake for miles.

With the fire extinguished, and immediate erosion plans in place to help protect the

grandeur of Lake Tahoe, Nevada Governor Jim Gibbons and California Governor Arnold Schwarzenegger acted upon the communities' requests for a fire and fuels policy review. Together, they created the California-Nevada Tahoe Basin Fire Commission to review the laws, policies, and practices that contribute to the vulnerability of the Tahoe Basin to wildfires.

Lake Tahoe is a natural treasure uniquely shared by the people of Nevada and California. It warrants every effort to protect and preserve its natural beauty, environmental health, and long-term lake clarity. Yet because Lake Tahoe is also a community of people, businesses, visitors, and homes, it also requires fire protection and safety. And in the end, the question comes to this: how can we prevent catastrophic wildfires that threaten both the people *and* the Lake Tahoe environment?

The Commission's Approach: The Commission was formed in August 2007 and met for eight months. The first two meetings were dedicated to listening to fire responders, agency directors and staff, technical experts, and, most of all, the public and residents of the Lake Tahoe Basin, as they explained their problems, concerns, and hopes in the wake of the disaster.

The Commission spent a little time on analyzing the Angora Fire itself, and much more on the efforts that had gone into preparing for the inevitable wildfires, wherever and whenever they might occur in the Basin. At those first meetings, the Commission also considered at length how the elements of environmental protection interplay with public safety. Three primary areas of discussion emerged, and committees were created to further explore the multitude of topics in each of these areas: Wildland Fuels Management, Community Fire Safety, and Legislation and Funding Policies.

The Commissioners all agreed that a universal goal was to have the most open, participative, and collaborative process possible – the Commission felt strongly that any member of the public should have a chance to have input. Toward that end the Commission developed an approach that invited any individual or organization to submit a 'Finding and Recommendations' suggestion that would be considered by one of the three committees, and then brought to the Commission for action. Altogether, 120 proposed findings and

nearly 200 recommendations were submitted by a variety of experts, stakeholders, organizations, and individuals, including Commissioners themselves. They were all reviewed and analyzed, and many were incorporated into the Commission's report.

The Commission spent much of its time listening to the Lake Tahoe community at its meetings. The Commissioners did not all agree on every proposed solution, but consensus emerged on most of the pressing fire safety and environmental issues impacting the Tahoe Basin. All agreed that Lake Tahoe continues to be at risk from catastrophic wildfire and everyone recognizes that a large-scale, destructive forest fire is, in itself, a significant threat to the clarity of Lake Tahoe and the Basin's environment. Catastrophic fire causes deleterious impacts to the surrounding forests, the crystal blue clarity of the Lake, the economic livelihood of the Basin, and the people that live or visit there.

The Recommendations: The Commission's findings and recommendations are presented in six categories that address both short and long-term needs, policy changes, education, funding, governmental structures, and environmental practices related to Lake Tahoe's



California-Nevada Tahoe Basin
Fire Commissioners meeting
at the South Lake Tahoe
Community College
January 25, 2008

vulnerability to wildfire. This report recommends some change from past practices, and change can be challenging for some. But the Commission's challenge from the Governors was to take a treasured jewel, two states, a diverse community, strongly held beliefs, the work of many regulatory agencies, and the input of a concerned public to create a set of recommendations to reduce the risk of wildfire to Lake Tahoe. We believe we have done that and submit to you the final report of the California-Nevada Tahoe Basin Fire Commission.

We thank the Governors for the opportunity to offer recommendations for preserving the majestic shared resource that is Lake Tahoe, while protecting its community.

The forest about us was dense and cool, the sky above us was cloudless and brilliant with sunshine, the broad lake before us was glassy and clear, or rippled and breezy, or black and storm-tossed, according to Nature's mood; and its circling border of mountain domes, clothed with forest, scarred with landslides, cloven by canyons and valleys, and helmeted with glittering snow, fitly framed and finished the noble picture.

Mark Twain



Harold A. Parker, Special Collections Department, University of Nevada, Reno Library

Emerald Bay, circa 1911

Executive Summary

Over the course of eight months deliberations, the California-Nevada Tahoe Basin Fire Commission heard from many Basin residents, fire professionals, land managers, environmental regulators, scientists, and others. By February 2008, more than 50 individuals and organizations had submitted 120 proposed findings (F) and even more associated recommendations (R) to the Commission.

About a third of these were developed by members of the Commission, while another third were developed by implementing and regulatory agencies at all levels of government, often working through interagency working groups. The rest were developed by interested members of the public including representatives of the conservation community, homeowners, and

forestry-interest groups. Some of the proposed findings and recommendations were adopted as submitted or with modifications requested by Commissioners. More often, they were edited to combine similar ideas, eliminate redundancies, or reconcile conflicting recommendations.

Ultimately, 90 recommendations were formulated by the

Commission to be forwarded to the Governors of California and Nevada.

The Commissioners unanimously recommended that the Governors issue Emergency Declarations regarding the extreme threat that catastrophic fire poses to the Basin, its residents, and the unique natural resource that is Lake Tahoe (R 10, 12). Lastly, the Commission's recommendations are organized into six categories which together constitute a plan for reducing the Basin's vulnerability to catastrophic wildfire and the impacts such fires would have on the Lake's fragile environment.



Landscape burned by the Angora Fire, July 2007

California Tahoe Conservancy

CATEGORY 1: Environmental Protection

The difference between the threat of catastrophic fire to the Lake Tahoe Basin and the threat of catastrophic fire to other areas of California and Nevada is the presence of Lake Tahoe itself. This unique national treasure is one of the few areas in America that warranted creation by two neighboring states and Congress of a planning authority to oversee its protection. For over thirty years, environmental matters within the Lake Tahoe Basin have been regulated by the

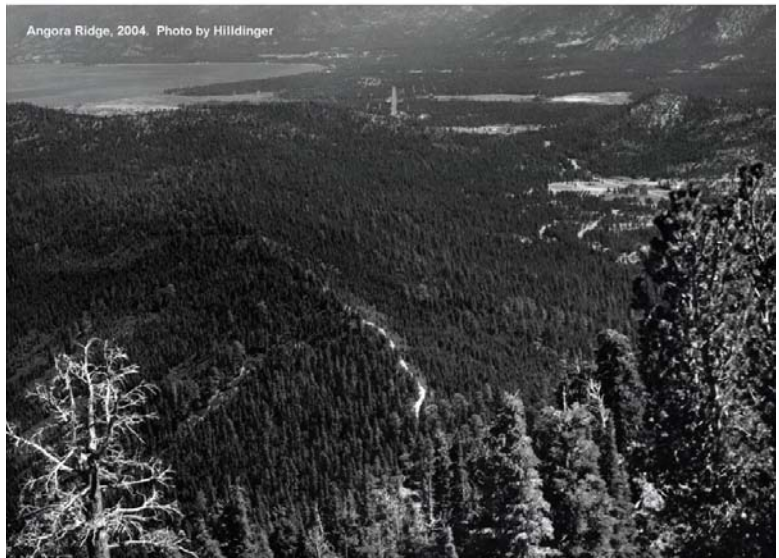
Tahoe Regional Planning Agency (TRPA) and a myriad of federal and state agencies. This unique system of regulatory oversight has resulted in the imposition of multiple layers of requirements that are not found in other areas of the two States. The Commission worked diligently to reconcile these important protections of the Basin's unique natural resources with commonly accepted fire prevention and suppression practices in order to find a balance that reflected the values of life, property, and environmental protection. To this end, the Commission's recommendations address the need for:

- All agencies to make restoration of the Basin's forests to a more natural and fire-resistant condition as a common and primary goal (R 2).
- Easier implementation of fuel reduction by streamlining project permitting procedures and monitoring requirements (R 17, 72).
- The TRPA and the Lahontan Regional Water Quality Control Board (LRWQCB) to review their procedures and requirements and, where possible without jeopardizing reasonable environmental practices, to modify their requirements to facilitate needed fuel reduction programs (R 16, 17, 18, 19, 35, 52, 53, 69, 73).

Angora Ridge, 1928. Photo by Taylor



Angora Ridge, 2004. Photo by Hillinger



Angora Ridge over time: 1928 (top) and 2004 (bottom)

CATEGORY 2: Issues of Governance

The Commission adopted a number of recommendations aimed at making the TRPA more responsive to concerns regarding the threat posed by catastrophic fire to residents of the Basin as well as to the Lake. Also included are recommendations addressing other agencies' practices and activities relating to facilitation of fuels removal projects in the Lake Tahoe Basin. Recommendations were forwarded regarding the need to:



Mount Tallac across Fallen Leaf Lake, circa 1914 (top) and eighty years later in 1994 from the same photo point (bottom)

Fire Chief's "Nine Point Letter" to the TRPA (F 8) and the agreements reached to resolve those concerns (R 19).

- Bring fire prevention perspectives to the TRPA (F 9; R 20) and have the TRPA review its present requirements in light of their impacts on the risk of catastrophic fire (R 18, 19).
- Impose enhanced reporting obligations by the TRPA to the States of California and Nevada regarding such matters (R 21, 22, 23).
- Develop a Memorandum of Understanding (MOU) between the TRPA and the LRWQCB to facilitate procedures relating to fuel reduction projects (F 11, 12; R 26).
- Make environmental standards relating to fuels removal projects uniform throughout the Basin (R 17).
- Support the Tahoe Basin
- Extend the Commission's authority so that it may monitor implementation of the recommendations that are accepted by the Governors (F 6; R 14, 22).

Fire in Sierra Nevada Forests - A Photographic Interpretation of Ecological Change Since 1849. George Gruell

CATEGORY 3: Community and Homeowner Fire Prevention

A number of the Commission's recommendations recognize that fire prevention is also a duty of every property owner and must be aggressively addressed by private property owners within the Basin. Recommendations are therefore presented to:

- Clarify regulatory requirements relating to the removal of pine needles from areas adjacent to residences (R 37).
- Require the implementation of defensible space around all structures (R 37, 44).
- Address the need to retrofit all existing structures in the Basin with ignition resistant materials (R 45, 46).
- Promote educational programs regarding defensible space and fire safe practices (R 38, 39, 41).
- Implement the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* (www.fs.fed.us/r5/ltbmu/documents/fuel-reduction-projects/10-year-plan/LTB_FUELS_PLAN_12_13_2007.pdf) that builds upon community wildfire prevention plans affecting every community within the Basin (R 15, 54, 55).

CATEGORY 4: Forest and Fuels Management

The key to addressing the buildup of fuels within the forests of the Basin is to remove the excess fuels as quickly as possible and to then maintain the forests according to sound forest management practices. The Commission developed a number of recommendations addressing this over-arching problem including:

- Implementation of the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* with regard to the Basin's forests (R 15).
- The need to facilitate the use of hand-thinning and low-impact equipment and allow pile burning in sensitive stream environment zones (SEZ) and on steep slopes (R 17, 68, 70).
- The need to allow use of readily available mechanized equipment in such areas in order to accomplish fuel reduction projects (F 32; R 17, 68).
- The need to facilitate forest thinning practices and biomass processing as means to reduce the intensity of future wildfires and resulting pollution to air and water resources (F 21; R 56).
- The need to quickly clean up and reforest areas burned by the Angora Fire (F 19; R 50).

CATEGORY 5: Fire Suppression

With respect to all matters within the Tahoe Basin, the Commission determined that protection of life, property, and the environment be served in that order of priority (R 78, 89). In that regard, the Commission has recommended a number of actions to:

- Enhance fire suppression resources within the Basin including revision of the “Balance of Acres” agreement between the State of California and federal authorities to assure that the Basin receives 24/7 fire protection services at a level equal to other state responsibility areas in California (F 37; R10, 75).
- Re-introduce California Department of Forestry and Fire Protection’s (CAL FIRE) presence within the Basin (R 76).
- Equip the C-130’s of the Nevada Air National Guard with modular airborne fire fighting systems (R 78).
- Make fuel reduction projects in areas within and adjacent to the Basin’s communities the first priority of all agencies (R 69, 89).

CATEGORY 6: Funding

Present funding levels for fire prevention, planning, and suppression activities in the Basin were found by the Commission to be inadequate and, in some cases, derived from sources that are not consistently reliable. The Commission also recognized the need for private property owners to participate in the costs of avoiding catastrophic wildfire. Consequently, the Commission has attempted to quantify immediate funding needs as well as funding needed on a long term basis from all stakeholders. To assist in identifying these needs and serve as a foundation for future discussions, the Commission adopted recommendations to:

- Address the need to stabilize revenues from existing funding sources and develop additional funding sources necessary for the implementation of the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* (R 84, 87, 88).
- Encourage the Governors to join with the States’ Congressional delegations and develop permanent federal sources of funding for emergency fuel reduction programs and forest restoration efforts in the Lake Tahoe Basin (R 82, 83).

Additional information regarding estimates of specific funding needs is set forth in Appendix F, “Costs Summary”. For the complete language of any of the Commission’s recommendations, please see the Recommendations section of this Emergency Report. For information regarding the background and rationale for the recommendations, please see the Findings section.

The Action Plan

Emergency response organizations have developed a common system and set of protocols for responding to and managing disasters. Initially, emergency responders are in a reactive mode. Their initial actions are focused on gathering information and assessing the nature of the problem – a phase that firefighters refer to as “size-up”.

The organization must quickly determine what “initial attack” actions to take, and what incoming resources (people, equipment) are available to assign to each task. This phase of the response is extremely dynamic, because disasters – especially in their early stages – are never static. As the disaster continues to unfold, and as the initial responders learn more facts, they must continue to take action. To do this they must try to identify the most urgent problems, prioritize and attack them with whatever resources they have available. As time passes, if all goes well, responders continue to acquire better information and more resources, and they can begin to move from a reactive mode to a proactive mode. Their actions evolve from *responding* to the situation to *managing* it.

A key tool in this evolution is the *Action Plan*, which is built on three key elements:

1. Prioritizing the objectives/problems.
2. Specifying resources to accomplish the objectives by priority.
3. Obtaining feedback on progress toward accomplishing the objectives so the plan can be adapted as the situation evolves.

The Governors of Nevada and California created the California-Nevada Tahoe Basin Fire Commission in response to the issues raised by the Angora Fire disaster of June, 2007. They directed the Commission to *size up* the growing wildfire threat to the Lake Tahoe Basin and to *attack* that problem by recommending “approaches for reducing identified vulnerabilities”.

The Commission used the Action Plan model to conduct its deliberations between August, 2007 and March, 2008. In step one, the Commission conducted an intensive fact-finding effort to identify and prioritize the major factors contributing to the Basin’s vulnerability to the increasing and potentially catastrophic impacts of wildfire. In the second step, the Commission developed a structure of committees and working groups that were assigned to accomplish objectives in the identified priority subject areas. And in the third step, the Commission developed a dynamic process in which all interested parties had opportunities to work through the committee and working group structure to propose “approaches for reducing identified vulnerabilities”.

The story that follows describes how this Action Plan evolved, and how it ultimately resulted in findings and recommendations that can be used to implement the Governors' intent to "reduce the Tahoe Basin's wildfire vulnerability while protecting the environment".

IN THE AFTERMATH OF DISASTER

On June 24th, 2007, the Angora Fire started southwest of Lake Tahoe from an unattended campfire. Within three hours, the fire had spread over four miles and burned more than 250 structures on private property and eventually burned 3,100 acres. It was the largest, most devastating wildfire in the history of the Lake Tahoe Basin. In its immediate aftermath came an outpouring of emotions from the Basin community: grief for the tremendous loss of property and environmental damage; relief that the disaster, which could have been so much worse, was over quickly; and gratitude for the heroic firefighting efforts, which helped to minimize the scope of the disaster.



Governors Gibbons and Schwarzenegger establish the Commission

Soon, however, the dominant emotion was a mixture of anger and frustration over what one local newspaper article described as long-standing environmental and regulatory "policies that seem to conflict with the community's need to improve defensible space and wildfire protection". Within days, local elected officials, chambers of commerce, and others were calling upon the Governors of California and Nevada to create a joint blue-ribbon commission to explore ways to minimize the recurrence of catastrophic wildfires in the Lake Tahoe Basin.

In response, Governor Jim Gibbons of Nevada joined with California Governor Arnold Schwarzenegger on July 25, 2007, to announce creation of the California-Nevada Tahoe Basin Fire Commission. The two governors signed a Memorandum of Understanding to create a panel of 17 voting members that represent each State's stake in the responsible management of lands and fire fuels within the Tahoe Basin, including representatives from affected state

agencies, fire agencies and the public. They also requested the Secretary of the U.S. Department of Agriculture designate one person from the United States Forest Service to serve on the Commission. The Commission was assigned to perform a comprehensive review of the laws, policies and practices that affect the vulnerability of the Tahoe Basin to wildfires, and to submit a report and recommendations to the two Governors by March 21, 2008.



Governors Schwarzenegger and Gibbons sign MOU

The Commission held its first meeting on September 10, 2007, at the Lake Tahoe Community College in South Lake Tahoe, California. Over the next six months, the Commission held nine additional meetings, alternating venues between Nevada and California within the Tahoe Basin.

THE COMMUNITY SPEAKS

At that first meeting in September, the newly-formed Commission began by receiving public comment. A number of concerned citizens expressed frustration about the Angora Fire, its aftermath, the general condition of the Basin's wildland fuels and urban forests, and a regulatory environment that many felt contributed to a growing wildfire threat in the Basin. As the day proceeded, and the Commission heard testimony



South Lake Tahoe Daily Tribune

Community members attending Commission meeting

from local fire chiefs, regulatory agencies, land managers, scientists, and others, several dominant themes emerged that largely determined the Commission's agenda for the next six months:

- The unique qualities of Lake Tahoe that make it a natural resource of global significance are increasingly threatened by an unnatural potential for catastrophic wildfires.
- The need for better interagency coordination in the Tahoe Basin among governmental entities of all types and at all levels.
- The existing firefighting response capability is not adequate for the level of risk in the Basin.
- Property owners are confused about what measures they need to take to protect their properties from wildfire, and how they can do so while remaining in compliance with numerous environmental rules, regulations, and "best management practices" (BMP).
- Similarly, there is confusion and/or disagreement among the various land management and regulatory agencies about how best to conduct fuel reduction activities, particularly in areas considered sensitive (i.e. steep slopes, stream environment zones (SEZ)).
- The need for increased biomass utilization capacity to handle the volume of vegetation fuels to be removed in an environmentally and economically efficient manner.

The Commission concluded its first meeting with a discussion of how best to fulfill its assignment to "perform a comprehensive review of the laws, policies, and practices that affect the vulnerability of the Tahoe Basin to wildfires and/or that pertain to fire prevention and fuels management in the Basin". Co-chairs Dargan and Rogich conducted a brainstorming exercise designed to identify the key issues before the Commission, and a work structure for addressing these issues, and ultimately, for developing findings and recommendations to be delivered to the Governors. At the end of the discussion a motion was adopted unanimously to create two committees initially, with the option to amend this structure as necessary in the future. In December a third committee was formed, and the structural organization of the Commission was complete. The three committees and their general areas of responsibility were:

The Community Fire Safety Committee was assigned to address those issues generally associated with the urban core areas of the Basin, including homeowner defensible space, community infrastructure and planning, fire protection and prevention, building standards, and education.

The Wildland Fuels Committee was assigned to focus on those issues generally found on the “wildland” side of the Wildland Urban Interface (WUI), including fuels treatment and disposal, forest management, permitting, and environmental monitoring.

The Legislation and Funding Policy Committee was originally formed to assess the feasibility of recommending Gubernatorial Emergency Declarations for the Basin. In January the Commission expanded this committee’s

assignment to address a number of additional legislative and economic issues, including long-term project funding and governance issues.



Tahowildfire.com

Angora Fire, June 2007

THE COMMISSION RESPONDS

The first part of the Commission’s Action Plan was now in place. At its first meeting it had identified initial priorities and had assigned resources, in the form of its committees, to begin to work on those priorities. A week later the Commission reconvened in Incline Village, Nevada, to gather more information and begin to develop committee work plans.

The initial focus at the September 21, 2007 meeting was an analysis of the Angora Fire. Representatives from the U.S. Forest Service described the wildfire itself and how the various fuel treatments that had been implemented previously may have affected fire behavior. An analyst from California’s Office of the State Fire Marshal described factors that contributed to the loss of homes and other structures in the fire, and showed how some homes had survived, thanks to defensive measures that had been taken by homeowners and firefighters to reduce risk of ignition. State and local fire chiefs described how defensible space measures – or the lack thereof – affected their ability to safeguard life and property.

Following these presentations, the commissioners discussed some of the Basin-wide implications of the Angora Fire. This discussion centered around perceived restrictions on fuels management activities and on the possibility of recommending to the Governors of Nevada and California that the dire wildfire threat in the Tahoe Basin constitutes an emergency situation.

In large part, the two meetings in September, 2007 determined the direction the Commission was to pursue over the remaining six months. Alternating meeting locations between California and Nevada, the Commission met eight more times. All but one of these meetings were two-day sessions, organized to allow the committees to convene on the first day and then report on their deliberations and recommend action to the full Commission on the second day. At every meeting, the committees and the Commission heard input from the public and from experts in a variety of fields, including firefighting, environmental protection, forest management, homeowner education, biomass utilization, and legislation. As this process evolved, the Commission's focus expanded outward from the specific local conditions that led to the Angora Fire of June 24, to a set of more global, Basin-wide issues that had developed over decades. A few of these were issues that the Tahoe Basin shared in common with many urbanizing communities in the Western United States, but a number of them were as unique to the Tahoe Basin as Lake Tahoe itself.

To no one's surprise, one of the richest sources of expertise on these issues were the people who live and work in the Tahoe Basin. After all, who could be more familiar with the conditions affecting the Basin's vulnerability to wildfire than the local firefighters, land managers, regulators, business owners, and citizens who not only lived with the wildfire threat from day to day, but in some cases, had seen their



Christy Daugherty

Home burned in Angora Fire, June 2007 (off Boulder Mt. Drive)

own communities threatened or burned? Long before the Angora Fire and the creation of the Commission, groups were already working in the Basin on such issues as fuel reduction project implementation, permit streamlining, and reconciling the conflicts between fire safety and environmental protection. The Commission began to collaborate with these existing groups, while also encouraging the formation of new working groups to assist its committees in

addressing some of the problematic issues that had come to light, such as biomass utilization, air quality, and science and technology. It quickly became evident that these working groups would provide a tremendous value-added benefit to the Commission's deliberations.

In the meantime, the Commission developed a unique process for developing the findings and recommendations requested by the Governors. In what essentially amounted to a nomination process, the Commission adopted a 5-point *Process for Developing Findings and Recommendations* that stated "anyone...including Commission members, agency staff, and members of the public" could propose findings and recommendations for consideration by the Commission (Appendix C). A template for making such a proposal was posted on the Commission's website, and included instructions



California-Nevada Lake Tahoe Fire Commissioners

for providing not just recommendations, but also background and supporting materials to justify a proposed finding. The proposed findings and recommendations were submitted electronically to Commission staff, who logged them in to a master tracking log and posted them on the Commission's website.

This approach was designed to be open and collaborative in fulfilling the Commission's mission and be as inclusive as possible. With only a few months to complete its work, the Commission wanted to receive and consider as many ideas as possible for reducing the Tahoe Basin's vulnerability to wildfire.

COLLABORATIVE SOLUTIONS

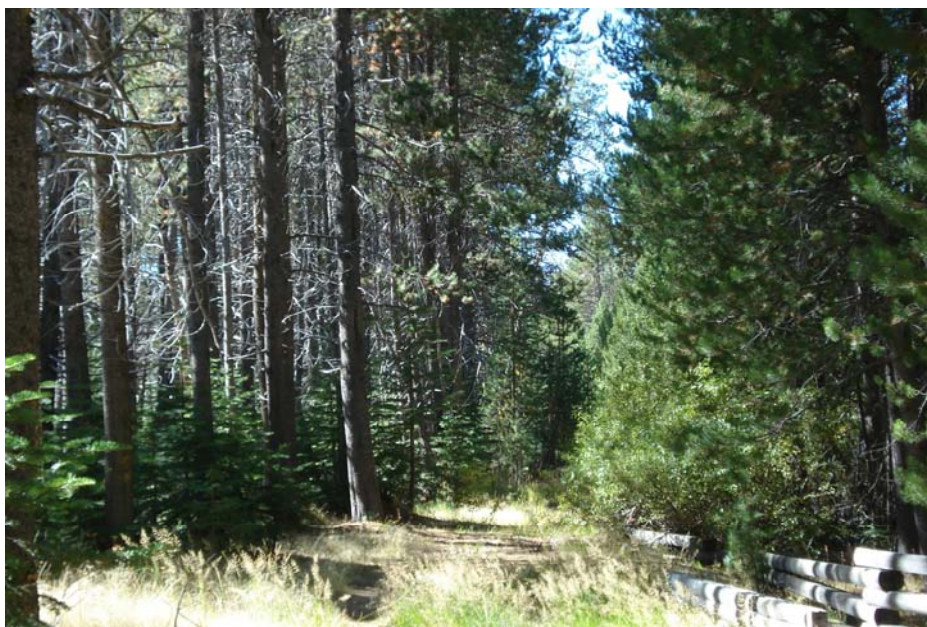
One surprising aspect of the Commission’s tenure can be illustrated by using a wildfire metaphor. Just as a major wildfire consists, in reality, of numerous simultaneous fires, each burning under its own unique combination of conditions resulting from variations in fuels, terrain, wind, time of day, etc. – so too, the Commission’s charge to “reduce the Tahoe Basin’s wildfire vulnerability while protecting the environment” consisted of many constituent parts. And just as a major wildfire is not extinguished all at once, but usually in increments, one piece of burning ground at a time – so too, the Commission began to make progress even before its work was complete.

Solutions began to emerge for problems that had previously seemed intractable. Whether this was due to the heightened urgency brought about by the Angora Fire, or the public airing of issues in the unique forum provided by the Governors’ Commission – suddenly there seemed to be a critical mass of sentiment determined to look at some of the old problems in new ways.

Collaborative solutions began to evolve in at least three major areas: *regulatory reform, consolidation of project planning efforts, and interagency working groups.*

Regulatory Reform

The Angora Fire demonstrated that some houses had burned due to a lack of defensible space and/or continuous fuelbeds, such as pine needles, that lay adjacent to burnable parts of the homes. Conversely, many homes were protected or had spot fires extinguished by firefighters who were able to take “close-in” suppression actions because defensible space and other fuels treatments provided safety zones in which they could safely work. Yet in the fire’s aftermath, there was general recognition that a majority of properties throughout the Basin had inadequate defensible space. Among many property owners and fire agencies,



Heavy fuels on residential property within stream environment zone

Christy Daugherty

there was a perception that the system of environmental rules and regulations designed to protect Lake Tahoe made it especially difficult in the Basin to remove flammable vegetation and groundcover for fire defense purposes.

At the Commission's second meeting, the chiefs of the Basin's seven local fire districts presented a unanimous proposal for addressing the critical issue of "defensible space". The chiefs appealed to the Commission to recommend regulatory changes to the Tahoe Regional Planning Agency's Code of Ordinances, so that property owners could clear flammable vegetation and ground cover from around their homes without running afoul of the numerous environmental rules, regulations, and "best management practices" designed to protect the water quality of Lake Tahoe.

The TRPA was receptive to these suggestions. The fire chiefs and the TRPA regulators came together to change longstanding practices. Through a series of meetings over the next several months, they came to agreements on changing a number of the TRPA's ordinances to make it easier for homeowners to implement defensible space measures without having to obtain inspections or permits. The Commission's recommendations seek to bolster these changes and encourage further improvement. Other collaborative efforts included:

- Fire agencies were given new authority to recommend the removal of trees that they deemed to pose fire threats.
- Property owners were given new leeway to remove shrubs and trees in order to meet defensible space standards.
- The TRPA agreed to relax requirements for property owners to maintain combustible groundcover around structures.
- Mutual acknowledgement that all enforcement of building standards and defensible space requirements would be the responsibility of the local fire agency.
- Mutual agreement that "best management practices" required by the TRPA code that are in conflict with legislated defensible space standards would be changed or repealed.

Through these collaborative efforts, the TRPA and the fire agencies succeeded in clearing up much of the confusion in the Basin about what measures property owners could take to protect their properties from wildfire while remaining in compliance with environmental rules and regulations. This empowers property

owners to take personal responsibility for implementing defensible space measures without being overly burdened by permits or inspections, while fire agencies are relieved of having to use hundreds of crew-hours per year doing work that property owners can now do themselves.

Consolidation of Project Planning Efforts

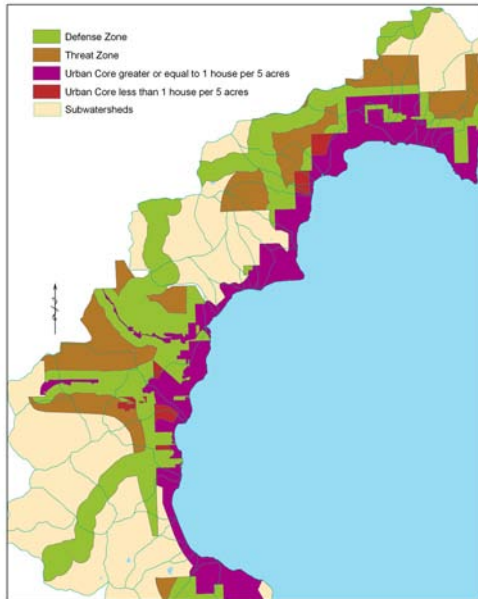
Another collaborative solution that evolved recently was the completion of a Basin-wide *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*. This document, also known as the “10-Year Plan,” was developed under the direction of the U.S. Forest Service’s Lake Tahoe Basin Management Unit in cooperation with 17 other fire and land management agencies in the Basin. The purpose of this “10-Year Plan” is to comprehensively combine in a single document all of the existing wildfire protection plans that have been developed within the Basin. It provides a single framework for these agencies to identify priority areas and a strategy to collaborate on implementing fuel reduction projects to accomplish those priorities.

This is of critical importance because the vulnerability to wildfire is Basin-wide and not confined to individual properties or jurisdictions. The “10-Year Plan” addresses this vulnerability holistically by identifying pathways to implement projects across multiple ownerships while minimizing economic, regulatory, and administrative constraints. For the first time there is a single plan that meets the intent of all previously existing Implementation Plans, including all Community Wildfire Protection Plans in the Basin. The “10-Year Plan” calls for all federal, state, and local land managers, as well as the Lake Tahoe Basin fire agencies and the Nevada Fire Safe Council, to meet annually to review the results of the prior year’s fuel reduction efforts and identify project priorities for the upcoming year. Where projects cross jurisdictional boundaries, the group will collaborate on implementing the project with the goal of reducing operational constraints and costs associated with environmental compliance and permitting.



Interagency Working Groups

Because of the unique values at risk in the Lake Tahoe Basin and complex land ownership patterns, there are numerous layers of regulations governing all



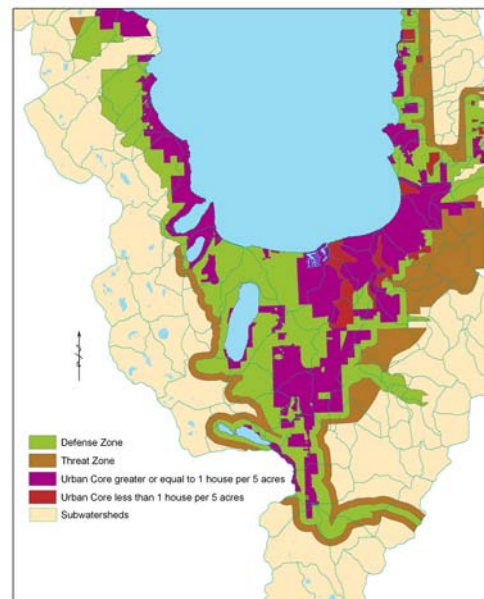
Wildland Urban Interface - Lake Tahoe Basin - Placer County

activities in the Basin. In fact, few places in the world are subject to such a complex governance structure. In addition to federal, state, regional, and local laws and regulations, the bi-state TRPA, created by a Compact approved by the States and the U.S. Congress, has a comprehensive Code of Ordinances that affects all agencies, organizations and individuals in the Basin. The TRPA is the only agency with Basin-wide jurisdiction.

In the wake of the Angora Fire, this complex governance structure came under severe criticism for a perceived lack of coordination among its constituent parts. The Commission's first meeting acted as a community forum for airing this criticism. In subsequent meetings, as the Commission heard from these various agencies and began to develop its work plan, these agencies came to recognize that the Commission offered a framework and incentive to pursue more collaborative relationships than in the

past. The most obvious manifestation of this was the formation (or in some cases, the reactivation) of working groups designed to address particular aspects of interagency coordination. The result was an unprecedented level of dialogue among agencies to identify new pathways for collaboration on issues such as air quality, biomass utilization, permit streamlining, defensible space, fuels project implementation, and science and technology. These working groups did much of the hard labor of developing findings and recommendations for consideration by the Commission.

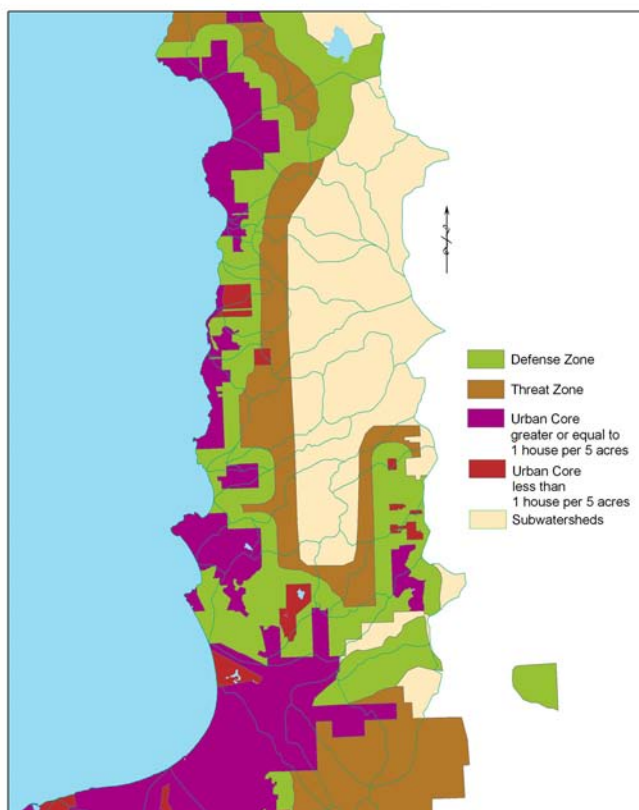
But the working groups were more than just the research and development arm of the Commission. They also began to tackle some of the thorniest aspects of the Basin's wildfire vulnerability.



Wildland Urban Interface - Lake Tahoe Basin - El Dorado County

GIS data helps define on-the-ground conditions

One example is the Tahoe Fire and Fuels Team (TFFT), which consists of representatives from the Basin’s local, state, and federal fire agencies, the TRPA, the Army Corps of Engineers, the Cooperative Extensions from both states, and others. The TFFT serves as the forum where project implementers and project regulators can come together and develop mutually beneficial processes for reducing wildfire vulnerability while protecting the environment. In just a few months, the TFFT has developed protocols for prioritizing fuel reduction projects and funding under the auspices of the “10-Year Plan”. It has begun to develop an integrated educational outreach program designed to deliver a single, consistent message throughout the Basin on implementing defensible space in compliance with water quality “best management practices” – something that was sorely missing in the past.



Wildland Urban Interface - Lake Tahoe Basin - Douglas County

GIS products created with data from the TRPA

The TFFT is also paving the way for new collaborative efforts to enhance the TRPA’s existing Basin-wide Tahoe Integrated Information Management System (TIIMS) data network. As a result of TFFT discussions, the Army Corps of Engineers has provided seed funding to build onto the TRPA’s Geographical Information Systems (GIS) platform a web-based application that will allow fire agencies to input defensible space inspection data for every parcel in the Tahoe Basin. This will allow anyone with Internet access to assess the defensible space status of their property and community, including the change over time as fuel reduction projects are implemented. This new tool will have far-reaching implications for community fire hazard and risk modeling, and may even provide a tool for first responders to use in emergency situations. In the not-too-distant future, for example, an engine company responding to a fire may be able to use the database to determine whether or not it is safe to enter a neighborhood obscured by smoke, based on mapped defensibility factors.

In summary, before the Angora Fire, the relationship between the Basin’s implementers and its regulators was largely characterized by conflict and misunderstanding. Today, thanks in some measure to the forum provided by the Commission’s deliberative process, there is growing recognition of the value of collaboration. Perhaps the best evidence of this is the success stories written by Basin residents themselves, even before the Commission had written its last chapter.

KEY ISSUES AND NEXT STEPS

Despite all the progress that might be considered short-term tactical wins in addressing fire risk in the Tahoe Basin, a number of issues remain that will continue to require attention long after the Commission delivers this final report to the Governors. Interestingly, although it took months of research and discussion to develop the specific findings and recommendations included in this report, the key underlying issues were identified at the Commission’s first meeting.

First and foremost among these is the overarching need to protect the unique qualities that make Lake Tahoe a global treasure. The other issues are subsets of this, but taken together, they encompass the spectrum of “laws, policies, and practices” that the Governors directed the Commission to review for the purpose of reducing the Lake’s vulnerability to perhaps its greatest threat: catastrophic wildfire.



Angora Fire, Lake Tahoe, June 2007

Photo courtesy of Scott F. Gillespie

Findings of the California

So singularly clear was the water that when it was only 20 or 30 feet deep the bottom was so perfectly distinct that the boat seemed floating in the air! Yes, where it was even 80 feet deep. Every little pebble was distinct, every speckled trout. ...Down through the transparency of these great depths, the water was not merely transparent, but dazzlingly, brilliantly so. All objects seen through it had a bright, strong vividness, not only of outline, but of every minute detail, which they would not have had when seen simply through the same depth of atmosphere.

Mark Twain



Harold A. Parker, Special Collections Department, University of Nevada, Reno Library

Cave Rock—The Lady of the Lake, circa 1911

Nevada Tahoe Basin Fire Commission

The California-Nevada Tahoe Basin Fire Commission completed a comprehensive review of the laws, policies, and practices that affect the vulnerability of the Tahoe Basin to wildfires. The Commission also looked at the myriad of natural and human factors that make this Basin so unique, but also render it uniquely susceptible to the occurrence and deleterious impacts of wildfires.

The Commission's 48 findings are presented in six categories:

Category 1: Environmental Protection

Category 2: Issues of Governance

Category 3: Community and Homeowner Fire Prevention

Category 4: Forest and Fuels Management

Category 5: Fire Suppression

Category 6: Funding

CATEGORY 1: ENVIRONMENTAL PROTECTION

Finding 1

The unique water quality and clarity of Lake Tahoe is a natural resource of global significance and is dependent on protection from catastrophic wildfires in the Lake Tahoe Basin.

Lake Tahoe is one of the three clearest lakes of its size in the world. The water quality of the Lake and its tributaries is fundamental to the scenic quality and global significance of the Lake Tahoe Basin, yet water quality depends on a fragile balance among soil, vegetation, and human impact. The focus of water quality protection in the Basin is to minimize human disturbance, and to reduce or eliminate the addition of pollutants that result from development or other disturbance. There is perhaps no single disturbance event with greater potential deleterious impact on the Lake than a catastrophic wildfire.

Finding 2

The risk of wildfire in the Tahoe Basin is extremely high and the probability of catastrophic fire occurrence is increasing.

The risk of summer fires is high to extreme every year, and the potential for catastrophic fires like the 2007 Angora Fire is increasing due to the unnatural forest conditions that have evolved over the past 150 years. The Lake Tahoe Basin is a fire-prone environment where frequent, low intensity fires historically played a critical ecological role. The natural fire regime of low elevation forests in the Lake Tahoe Basin was characterized by a 5 to 20 year fire return interval and very open stands of large trees as evidenced by studies of fire scars and historic photographs. Today, however, due to the unprecedented absence of natural fire and its thinning and recycling effects, and the lack of proper forest management, the forests in the Lake Tahoe Basin are composed of more trees, surface fuels, and overall biomass available to burn in wildfires than ever before. Under healthy forest conditions, native bark beetles play an important ecological role by killing stressed and weakened trees every year, but under current forest conditions in the Basin, they now kill trees in record numbers due to the dense forest structures in which most, if not all, trees are stressed and weakened by extreme competition among trees for water and soil nutrients.

Finding 3

Wildfires increase greenhouse gas emissions. Avoiding forest fires through fuels management is an important way to reduce greenhouse gas emissions. Using the forest biomass from fuels management activities can contribute to expansion of renewable energy sources.

In healthy forests, fuels management strategies increase the forest's ability to store carbon and reduce the threat of catastrophic fires.

Fuels Management/Biomass strategies are designed to reduce greenhouse gas (GHG) emissions through the use of timely fuel hazard reduction treatments on suitable forest land throughout the state. While hazardous fuel reduction techniques include fire use, biological methods, and mechanical treatments, this strategy focuses solely on mechanical treatments as a means of reducing fire hazard. (Mechanical treatment can include crushing brush and other fuels as well as removing trees that serve as ladder fuels to the crown.) This strategy combines the fire prevention benefits of fuel hazard reduction with the supply of biomass for use in bio-power and bio-fuel production. Therefore, this strategy supports the goals of the Bioenergy Action Plan, including the goal to enhance the supply of biomass through fuel hazard reduction (California Energy Commission, 2006).



Matt Dickinson

Angora Fire, Tahoe Keys

This strategy reduces GHG emissions through two primary mechanisms:

1. Through hazardous fuels treatment, the frequency and severity of wildfires will be reduced. As a result, CO₂ emissions will be reduced and more carbon will remain in forest biomass.
2. The fuels (biomass) removed as part of the treatment can be used to produce electricity and liquid fuels. This biomass-based energy can displace the use of fossil energy (natural gas for electricity production and petroleum-based gasoline), thereby displacing the GHG emissions from the use of these fossil fuels.

This strategy is constructed in two parts. The first part focuses on the fuels treatments that can be accomplished through state funding and coordination with federal forest management activities. This element of the strategy is limited primarily by the funds available to support treatment activities. The second element is focused on producing biomass to support the goals of the Bioenergy Action Plan. The forest lands requiring treatment are significantly larger than the areas that can be addressed with available funding in the first part of the



Kathy Murphy

Fuel treatment that burned with surface fire during the Angora Fire

strategy. By promoting the use of biomass for bio-power (electricity) and bio-fuel production, the strategy proposes to achieve forest management goals by satisfying the growing demand for renewable energy sources.

It is commonly accepted that the reduction of total forest fuel load along with changing the structure and arrangement of those fuels has a positive effect on the ability of fire suppression forces to control a fire. Those benefits occur both when a fire is small, thus increasing the success rate of initial attack forces; and once a

fire becomes large by providing a fuel bed that encourages crown fires to fall to the ground where suppression forces can gain the upper hand.

By focusing on the complementary goals of preventing wildfires and reducing greenhouse gases, the Governors of Nevada and California have an opportunity to enact a collaborative approach to ensuring healthy forests, increasing carbon sequestration, and utilizing biomass which will help reduce the threat of forest fires.

Finding 4

A synthesis of research efforts is needed and should be available in a centralized place so that fire practitioners and regulatory agencies have a common understanding of the most recent scientific information pertaining to fuel reduction projects. Specifically, there is a need to advance our understanding and develop strategies for implementing fuel reduction activities in sensitive habitats (i.e. stream environment zone's (SEZs) or steep slopes), evaluate the economics of fuel reduction efforts, and to develop and conduct a comprehensive monitoring and evaluation program for these activities.

The imminent nature of the fuel hazard problem has been repeatedly recognized by many high profile efforts including the National Fire Plan, the Healthy Forests Initiative (HFI), the Healthy Forests Restoration Act (HFRA), and the Southern Nevada Public Lands Management Act (SNPLMA)-White

Pine Amendment to facilitate fuel reduction projects and alleviate existing fuel loads across the landscape. For this reason, the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* proposes to conduct fuel reduction projects on 68,000 acres over the next decade. To accomplish this ambitious goal, partners will have to consider new technologies, practices and policies that have unknown impacts to other important policy goals in the Tahoe Basin, such as lake clarity, wildlife habitats and sensitive vegetation communities such as old growth and riparian vegetation. A common understanding of the most recent scientific information will help all parties accomplish the ambitious fuel reduction goal in ways that also protect other valued resources.



Christy Daugherty

Untreated areas in a stream environment zone

CATEGORY 2: ISSUES OF GOVERNANCE

Finding 5

The forests surrounding Lake Tahoe are not healthy and their long term prognosis is poor. The condition of the Basin’s forests and the risks of fire, whether caused by man or nature, present disasters waiting to happen, with severe potential for loss of life, massive property destruction, and inestimable pollution of the Lake.

The risk of catastrophic fires within the Lake Tahoe Basin presents an imminent threat to life, property and the environment of this nationally significant and unique natural resource.

Catastrophic wildfire respects no territorial boundaries, and endangers all within its path. Consequently, the Lake Tahoe Basin needs urgent fire

mitigation actions across a wide spectrum of interconnected systems in order to address this clear and present danger, including fire suppression, fuels management, economic and land-use planning, and a multi-layered regulatory environment.

Obtaining State and Federal Emergency Declarations will assist in providing all possible solutions as rapidly as possible in order to protect the public as well as the clarity of Lake Tahoe without sacrificing necessary environmental protections.

A mechanism to monitor the accepted recommendations will help ensure that progress is made toward those recommendations and maintained over time.

Many of the Commission's recommendations, if adopted, will require implementation efforts by various governmental jurisdictions and entities in order to address the emergency posed by these risks. Copies of the Commission's final Report should therefore be provided to all relevant government officials for review and such action as determined to be appropriate and necessary be taken.

Public safety and environmental improvements in the Lake Tahoe Basin are severely threatened by the overarching hazard of wildfire. The Lake Tahoe environment includes the people and communities within the Lake Tahoe Basin as well as the Lake itself.



Burned over creek, Gondola Fire, July 2002

Lake Tahoe is a recognized significant and unique shared natural resource, and as such, warrants a significant and unique approach to hazard mitigation. The potential of the wildland fire hazard within the Lake Tahoe Basin is expertly estimated to be catastrophic in magnitude of risk. This potential was demonstrated by the 3,100-acre Angora Fire in June, 2007.

The threat of catastrophic fire and its specific risk to the water quality of Lake Tahoe is substantial and defined by the geographic boundaries of the Lake Tahoe Watershed Basin. This risk has predictable harmful consequences to

public and environmental safety. The available mitigations to reduce this risk have been identified and can be implemented with a systematic approach. These available and reasonable mitigations serve the public and environmental interest, and will result in a reduced threat to a significant and unique resource.

The purpose of the Emergency Declarations should therefore be to reduce the threat that catastrophic wildfire in Lake Tahoe Basin poses to life, property, and the environment and to facilitate the work that must be done to preserve and protect this unique national treasure.

Finding 6

There is a need for a mechanism to monitor the Governors' accepted recommendations of the California-Nevada Tahoe Basin Fire Commission to ensure those recommendations are carried out, implemented and maintained over time.

The mission of the California-Nevada Tahoe Basin Fire Commission is to make recommendations to the Governors of Nevada and California to reduce the threat of fire in the Lake Tahoe Basin and preserve and protect lives, property and the unique environmental qualities of the Lake Tahoe Basin. It must be recognized that some or all of the recommendations that may be accepted by the Governors of Nevada and California will take time to implement. A mechanism should be established to monitor the progress of the recommendations, ensure they are put into place, and are completed in a timely fashion and remain in place over time.

Finding 7

The existing system to permit fuel reduction projects in the Lake Tahoe Basin is often confusing, sometimes redundant, and overly complex.

Because of the unique values at risk in the Lake Tahoe Basin and complex land ownership patterns, there are numerous, sometimes overlapping, regulations governing all activities in the Basin. The permit requirements that govern fuel reduction activities are especially complex, and have inhibited the implementation of necessary measures to enhance forest health and protect against wildfire occurrence. Fuel reduction projects that are proposed or funded by public agencies, or that require federal, state, local, or local discretionary approval, are subject to numerous federal, state, and/or regional environmental laws and regulations that are designed to protect or reduce impacts on the environment, and allow the public to participate in agency decision-making processes that may affect the environment. These include the National Environmental Policy Act, California Environmental Quality Act, Clean Water Act, Clean Air Act, Endangered Species Act, and the Forest Practices Act. In addition to federal and state laws, the Tahoe Regional Planning Agency (TRPA) has a comprehensive Code of Ordinances that affects all agencies, organizations, and individuals in the Basin.

Finding 8

Although the TRPA ordinances and standards have been adopted in accordance with the TRPA environmental documentation standards, they have generally not been adopted with a view towards the mitigation of catastrophic fire hazards. As a result, a number of requirements and standards have been imposed by the TRPA within the Tahoe Basin for the purpose of achieving Environmental Threshold Carrying Capacities, but without sufficient, if any, consideration given to mitigation of hazards that may contribute to catastrophic fires.

The Tahoe Regional Planning Compact, while specifying that the TRPA shall determine environmental threshold carrying capacities necessary to maintain public health and safety within the region (see, the TRPA Compact Art. V(b); Art. II(i)), does not expressly address fire risk and the TRPA has not expressly considered fire safety matters when adopting many of its ordinances and standards.

The Tahoe Basin Fire Chiefs for the seven fire protection districts or departments in the Tahoe Basin have identified a number of restrictions and impediments within the ordinances and procedures of the TRPA that add to the risks of catastrophic fire, thereby increasing the hazards of such fires to the communities located within the Basin, and to the residents of the Basin. In a letter to the Commission dated September 18, 2007, the Fire Chiefs recommended the following changes to the TRPA Code of Ordinances and various standards:

1. Removal of all restrictions requiring prior approval to remove trees within 100 feet of structures to allow property owners to meet the standards of PRC 4291; the grant of authority by the TRPA to Tahoe Basin Fire Agencies to authorize such tree removals in compliance with PRC 4291 and the TRPA's modified ordinance, and without requiring approval or confirmation by a licensed forester.
2. Elimination of coverage requirements with regard to the construction or expansion of ingress/egress roads required for emergency access.
3. Acceptance of a 5 feet wide noncombustible "moat" around all structures and providing that the use of rock, gravel, brick, or pervious concrete in such areas shall not constitute a coverage increase.
4. Acceptance of the removal by property owners of all flammable material, vegetation, or other combustibles (specifically including pine needles and wood mulch) around structures for an area up to 30 feet.
5. Acceptance of 100 feet of defensible space around any structure regardless of ownership.

6. Acceptance of up to 300 feet of defensible space around any structure on sloped properties.
7. Acceptance of the removal of native shrubs and trees under the drip-line of any tree or below any deck or overhang.
8. Agreement by the TRPA that the enforcement of building standards and defensible space requirements are solely the responsibility of the local fire agencies.
9. Agreement by the TRPA that fire safety standards of PRC 4291 to be followed within the Basin supersede and have priority over any conflicting BMPs mandated by the TRPA code or ordinances.

The TRPA's staff has advised the Commission that that the TRPA has met with the Fire Chiefs and have addressed most of their recommendations. As to item 1 above, the TRPA Governing Board has recently taken action to allow trees of up to 14" in diameter to be removed by homeowners for defensible space purposes. As to item 2, the TRPA points out that it has always allowed property owners to allow for turnarounds and driveway modifications, provided the property owner provided sufficient coverage for such areas. The TRPA is now consulting with the fire agencies regarding emergency ingress/egress matters when new plans are submitted. However, there are many existing roadways and driveways in the Basin that do not meet the current requirements for emergency ingress/egress.

As to item 3, the TRPA reports that it has no objections to the 5 feet wide noncombustible "moat" concept and that no new changes are necessary. As to item 4, this Commission is considering, with the TRPA input, other Findings and Recommendations that specifically address acceptable defensible space practices. Similarly, the TRPA reports that as to items 5 and 6, these defensible space practices are acceptable to the TRPA and are already addressed in the TRPA code and practice. However, the TRPA reports that existing MOUs with the fire agencies may have to be modified with regard to such matters.

As to items 7 and 8, the TRPA reports that these matters are not subject to the TRPA code and practices and therefore not of concern to the TRPA. However, with regard to item 9, the TRPA reports that it and the Fire Chiefs are close to resolution of the conflicts between BMPs and PRC 4291, and that if code changes are necessary, they will be presented to the TRPA Governing Board for approval.

Finding 9

There is presently no requirement for experienced fire professionals and forest health experts to be represented on either the Governing Board or the Advisory Planning Commission of the TRPA. Participation by such experts in the TRPA matters affecting forest health and public safety would help make the TRPA more responsive to the prevention of catastrophic fires resulting from poor forest health within the Basin and the risks posed thereby to public safety, and would help assure continued attention to these matters by the TRPA.

It is widely believed by many residents and property owners within the Tahoe Basin that the TRPA has not considered or has refused to adequately consider and address the risks of catastrophic fires to people, property, and the forests within the Basin and has, in fact, adopted ordinances and procedures that exacerbate the risks of catastrophic fire within the Basin.

The bi-state Tahoe Regional Planning Compact (“Compact”) defines the composition of the Governing Board of the TRPA and of the TRPA’s Advisory Planning Commission, and sets forth the qualifications of such members. However, the Compact fails to require experienced fire professionals and forest health experts to serve on either the Governing Board or the TRPA’s Advisory Planning Commission (APC). The presence of such individuals on both bodies would help insure that forest health and fire safety issues remain at the forefront of the TRPA’s agenda. However, the Compact would require amendment in order to add additional members to the TRPA Governing Board, a time consuming and potentially uncertain process.

Presently, the Compact provides for 15 members of the TRPA’s Governing Board, of which 7 represent various California constituencies, 7 represent various Nevada constituencies, and 1 is an Appointee of the President of the United States. 1980 Compact, Art. III(a). Pursuant to the 1980 version of the Compact, 12 of the 15 members of the Governing Board serve at the pleasure of their respective appointing authorities. As to the California delegation, 2 of the members are appointed by the Governor of California. As to the Nevada delegation, 1 of the members is appointed by the Governor of Nevada. The remaining 9 members of the Governing Board who serve at the pleasure of their respective appointing authorities include representatives of the five counties that are located within the Basin (Placer, El Dorado, Washoe, Carson City, and Douglas), a representative of the City of South Lake Tahoe, and representatives of various other constituencies. The qualifications and experience for all of the foregoing described members are not defined in the Compact and could, presumably, include persons who are experienced in fire prevention and protection matters and forest health and restoration matters. Although the local government entities having authority to appoint members to the Governing board may appoint members of their respective elective boards to the positions

on the TRPA Governing Board, they are not required to do so. Therefore, authority presently exists for any of these appointing authorities to appoint experienced fire professionals and/or forest health and restoration experts to the Governing Board.

Although no additional members of the Governing Board of the TRPA can be appointed by the respective appointing authorities, the Compact is silent as to the appointment of advisory, ex-officio non-voting advisors to the Governing Board. Therefore, it is believed that the Governing Board of the TRPA could invite qualified persons to serve in advisory roles as non-voting, ex-officio members of the Governing Board and that qualified fire professionals and forest health experts could be utilized in these roles in order to bring their important perspectives to the Governing Board.

With respect to the APC, the provisions of Article III (h) of the Compact provide that the APC shall have a *minimum* of 15 members. The Compact does not prescribe the actual number of members the APC may have as evidenced by the fact that the APC presently has 19 members. Moreover, the Compact provides that “*at least four lay members with an equal number from each State. . .*” shall be appointed by the TRPA Governing Board to the APC (emphasis added). Therefore, it appears that the composition of the APC may be supplemented by the TRPA Governing Board from time to time to meet specific needs such as expressly adding expertise in forest health/restoration and fire matters.

The TRPA Governing Board also has express authority under the Compact “...to employ such other staff . . . as may be necessary to execute the powers and functions provided for under this compact or in accordance with any intergovernmental compacts or agreements the agency may be responsible for administering.” 1980 Compact, Article IV(a). Thus, the TRPA itself has authority to employ fire professionals and forest health experts, if it so chooses.

Further, the TRPA Governing Board has, on its own action since the occurrence of the Angora Fire, created a special committee composed of eight of its members to serve as a “Catastrophic Wildfire Prevention Committee”. There appears to be no impediment under the Compact to the appointment of qualified fire professionals and forest health experts to this Committee in order to bring these important perspectives to the TRPA’s Governing Board.

Based on the foregoing, there presently are means to bring the important perspectives of experienced fire professionals and forest health experts to the TRPA without having to open the Compact to amendment.

Finding 10

There is a need to improve communications between the Tahoe Regional Planning Agency (TRPA) and the States of California and Nevada and to provide enhanced oversight by the two states. These steps are necessary in order to assure that the recommendations of the California-Nevada Tahoe Basin Fire Commission are followed up on, the *Lake Tahoe Basin Multi-Jurisdictional Fire Reduction and Wildfire Prevention Strategy 10-Year Plan* is fully implemented, and the Community Wildfire Prevention Plans relevant to Tahoe Basin communities are implemented without unreasonable regulatory interference. Additionally, there are a number of other components of the Tahoe Basin regional plan that directly or indirectly relate to important forest health and public safety issues relevant to the potential for catastrophic fire within the Basin that need to be implemented as expeditiously as possible. Accordingly, means should be devised to facilitate regular reports by the TRPA to the Governors and Legislatures of both States, and to the Congressional delegations of the two states, regarding such matters and to provide for greater oversight by the two States of the TRPA's activities relating to such matters.

One of the lessons of the disastrous Angora Fire is that there is a need to provide oversight and coordination over the efforts of all of the numerous agencies having jurisdiction in the Basin regarding issues relating to fire protection, public safety, and environmental matters. This is especially true with regard to the question of how regulatory requirements relating to environmental matters may unreasonably affect or impede public health and safety within the Basin. It has been stated in the hearings of the Fire Commission by various parties that the Fire Commission has provided long needed "adult supervision" over the various agencies in the Basin and their inter-agency efforts regarding fire safety issues. In this vein, the Fire Commission has provided a necessary review and oversight process that is needed in order to address the serious hazards posed by catastrophic fire to the Tahoe Basin.

However, even prior to the disastrous Angora Fire, the various public entities involved in such matters have, in fact, worked together to develop a 10-year plan to implement in the Basin a well thought out and badly needed *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*. Their efforts in this regard are to be applauded. All of the fire departments and fire protection districts that serve the Basin have long recognized the risks of catastrophic fire to the Basin, and the public agencies having jurisdiction over environmental matters in the Basin have acknowledged that the risks of catastrophic fire pose severe environmental risks to the Basin and the Lake. Unfortunately, it took the Angora Fire to underscore the seriousness of the issue with some of the public agencies. All of the involved agencies have since expressed their

intent and willingness to continue their cooperative efforts to implement the “10-Year Plan” and, in many important and significant ways, have already started the process to do so.

The TRPA is unique among the various agencies that participated in the creation of the “10-Year Plan” because it is the only agency that has authority throughout the entire Tahoe Basin. The express authorities and responsibilities of the TRPA under the Compact to prescribe standards relating to numerous matters such as “water purity and clarity,” “tree removal,” “soil and sedimentation control,” and “watershed protection” all relate, whether directly or tangentially, to forest health and fire prevention. Further, the TRPA Governing Board has express authority under the Compact to promulgate and implement programs (a) to protect life and property and/or public safety, and (b) forest preservation and restoration plans.

The following authority is expressly set forth in the Compact to the States of California and Nevada:

“The Tahoe Regional Planning Agency shall have such additional powers and duties as may hereafter be delegated or imposed upon it from time to time by the action of the Legislature of either state concurred in by the Legislature of the other.” 1980 Compact, Art. X (b).

While the authority to impose extra powers on the TRPA requires the prior consent of Congress pursuant to Section 4 of public Law 96-551, it would appear that the States of Nevada and California may, by action of the Legislature of either State concurred in by the Legislature of the other, impose additional duties upon the TRPA without the prior consent of Congress. The TRPA, as the only agency having jurisdiction over all lands within the Basin, whether managed by governmental agencies or owned by private parties, is uniquely positioned to monitor fuel reduction projects and forest health and restoration projects undertaken within the Basin. Therefore, the TRPA should be able to easily serve as a central source of coordinating Basin agencies’ activities and the collection of information regarding the implementation of fuel reduction projects, forest health and restoration projects, and fire safety procedures throughout the Basin.

In addition to imposing further reporting obligations to the two States, there is a need to provide effective oversight of the TRPA activities including, in particular, its efforts to assure public safety within the Basin, the protection of the Basin’s forests, and the preservation of other natural resources that face the hazards of catastrophic fire. However, as a unique creation of the two states and the federal government, the oversight of the TRPA’s activities by the three governments that created it has not been as effective as it could and should be.

Finding 11

The Memorandum of Understanding (MOU) between the USDA Forest Service and the Tahoe Regional Planning Agency (TRPA) creates unnecessary and unintended barriers to efficient planning and accomplishment of fuels management projects. Likewise the MOU between the USDA Forest Service and the Lahontan Regional Water Quality Control Board (LRWQCB), while more recent than the TRPA MOU, may have sections that inadvertently impair efficient implementation of fuel reduction projects.

The MOU between the USDA Forest Service and the TRPA was signed almost 20 years ago in 1989 and is out of date. The sections dealing with fuel reduction and the necessary associated activities, such as roads, do not reflect contemporary technologies and practices, especially considering the current aggressive goals and objectives to reduce the fuel loading within the Lake Tahoe Basin. At the time the MOU was signed, fuel reduction projects were modest in size and scope. The MOU focused more on other types of projects that were of greater concern, such as salvage logging resulting from extensive bug kill. In the past few years awareness of the threat of catastrophic wildfire in the wildland urban interface (WUI) has increased tremendously resulting in a better understanding of the need for aggressive fuel reduction projects. Concurrently, funding from sources such as Southern Nevada Public Lands Management Act (SNPLMA) has become available to accomplish intensive multifaceted large scale fuels management projects. Consequently the scope of fuels projects currently envisioned is not covered appropriately in the MOU. Similarly, the MOU between the USDA Forest Service and the LRWQCB, while only a few years old, also does not address the nature of fuel reduction projects in light of current practices and emerging innovative technologies.

Finding 12

Compared to the permitting process for fuel reduction projects in Nevada, projects in California are subject to an additional layer of permitting requirements by the Lahontan Regional Water Quality Control Board (LRWQCB). This added regulatory layer has resulted in project delay, increased costs for permitting and project implementation, deletion of critical components from projects, and reduced project scope due to its imposed increased costs. There is a need to create greater consistency in permitting requirements in the Tahoe Basin so that priority projects for fuel reduction projects in areas subject to fire hazards will be undertaken according to relative need, rather than relative ease of permitting.

As a result of the additional layer of permitting requirements imposed by the LRWQCB, land managers and private property owners seeking to mitigate fire hazards in stream environment zones and steep slope areas are reluctant and, in many cases unwilling, to undertake fuel reduction projects in such areas. Further, delays and uncertainties in the LRWQCB permitting process pose difficulties to land managers in holding together funding grants for such projects.

When the TRPA was created, the prevention of catastrophic fire was not considered and the impacts of catastrophic fire on the environment of the Tahoe Basin and the Lake were not addressed. Since then, forest fuels build-ups in the Basin have occurred as the result of unintended consequences of the TRPA's and the LRWQCB's efforts to curb erosion by preventing the removal of forest fuels (especially in stream environment zones and on steep slopes), and the efficiency of the fire agencies in keeping fires in the Basin under control. Circumstances have changed, and now the threat of catastrophic fires poses hazards to the Lake's water quality and clarity never imagined by the creators of the Tahoe Regional Planning Compact.

Recognizing these changed circumstances, the TRPA Governing Board took action in 2002 to declare that the prevention of catastrophic fires within the Basin its' "Number One Priority". In response to the Angora Fire in June 2007, the TRPA Board created a "Catastrophic Wildfire Prevention Committee" to address forest health and fuel reduction issues. In addition, proposals have been made to this Commission to recommend revisions or supplements to the TRPA Governing Board's composition and its responsibilities in order to permanently enhance the TRPA's attention to this important issue.

While the LRWQCB has made efforts to facilitate fuel reduction projects in stream environment zones and steep slope areas, substantial disparities remain between the permitting processes followed in California and Nevada, and such disparities have generally increased in recent years as the LRWQCB requirements have made fuel reduction projects in the California portion of the Tahoe Basin more expensive, more time consuming, and less certain. These disparities arise from the application by the LRWQCB of subjective, if not arbitrary, standards to such projects and the LRWQCB's lack of the multi-disciplinary capabilities necessary to assess such projects that are presently available within the TRPA. Because of the foregoing, the TRPA is better prepared to exercise this authority. The TRPA is a multi-disciplinary agency that is capable of considering all the impacts of such proposed projects and, as a bi-state regional authority, the TRPA can apply its authority in regard to such matters uniformly in both States.

CATEGORY 3: COMMUNITY AND HOMEOWNER FIRE PREVENTION

Finding 13

Regulatory and implementing agencies in the Lake Tahoe Basin have failed to provide homeowners with a consistent message regarding defensible space and erosion control “best management practices” (BMPs). Compliance with all requirements of defensible space is lacking in the Basin.

California Public Resources Code (PRC) 4291 requires at all times that all residents maintain a firebreak around and adjacent to their home by removing and clearing away all flammable vegetation or other combustible growth. However, PRC 4291 allows single specimens of trees, ornamental shrubbery, or similar plants that are used as ground cover, if they do not form



a means of rapidly transmitting fire from the native growth to the home. Tahoe Basin Fire Chiefs – including those in Nevada – have agreed to adopt PRC 4291 as the defensible space standard throughout the Basin. There is a need to actively enforce PRC 4291 on the California side of the Lake Tahoe Basin and there is a need for the Nevada jurisdictions to formally adopt PRC 4291 standards and enforce compliance.

Historically, one of the biggest factors inhibiting implementation of defensible space measures in the Basin has been homeowners’ reluctance to remove dry flammable vegetation for fear of violating BMP regulations. In many cases, homeowners believe they must cover all bare soil with wood chips or pine needles in order to be BMP compliant. In recognition of this, the Tahoe Basin Fire Chiefs have urged the regulatory agencies in the Basin to come to agreement on a single, clear and consistent set of guidelines and practices to make it easier for property owners to attain defensible space around their properties without violating erosion control “best management practices” (BMPs).



Finding 14

A comprehensive wildfire protection education framework “Living With Fire” currently exists in the Tahoe Basin.

The “Living With Fire” program is an interagency wildfire threat reduction education program for homeowners coordinated by the University of Nevada Cooperative Extension. The objective of the program is to encourage homeowners to accept responsibility for wildfire threat reduction to their homes and to implement the practices necessary to protect their property. Since 2001, Lake Tahoe Basin specific “Living With Fire” materials have been developed and distributed to Lake Tahoe fire fighting agencies, homeowners, and others. Wildfire threat reduction recommendations used in the “Living With Fire – Tahoe Basin” program are developed through a collaborative effort involving the Tahoe Basin fire protection districts and departments, California Department of Forestry and Fire Protection (CAL FIRE), USDA Forest Service, Nevada Division of Forestry, and the Universities of Nevada and California Cooperative Extension and are reviewed by the TRPA to ensure compliance with their codes and policies. These recommendations are then disseminated to Tahoe Basin homeowners and others via a variety of delivery methods including publications, homeowner workshops, television programs, videos, exhibits, and a “Living With Fire – Tahoe Basin” specific website. For the most part, the “Living With Fire – Tahoe Basin” program is dependent upon annually acquired grant funds for continued operation.



Finding 15

There is a need for private property owners to become involved in the funding and implementation of defensible space and other fire safety programs within the Lake Tahoe Basin.

Local fire districts are responsible for defensible space inspections, and work with their constituents to assess and implement fire hazard reduction measures. The great majority of private property in the Tahoe Basin is out of compliance with defensible space regulations. The cost per acre for fuel treatments and other defensible space measures can be higher in the Tahoe Basin than in other areas of the Sierras. Tax credits and other incentives should be developed to encourage the implementation of such programs.

Finding 16

There are no CAL FIRE Prevention Positions in the Basin and no Forest Service Prevention Staff funded under the Balancing of Acres agreement.

The USDA Forest Service currently provides fire protection and suppression on “state responsibility areas” within the California portion of the Basin under the “balancing of acres” concept. Currently, there is a huge backlog of defensible space inspections in the Basin due to a lack of state and federal staffing for fire prevention.

Finding 17

The use of appropriate building materials helps prevent homes from igniting in a fire. Building codes within the Tahoe Basin have generally been updated and modified by state and local authorities to require fire safe construction materials. However, many existing structures in the Tahoe Basin do not meet current building codes and standards relating to fire safety. Consequently, there is a need to require the retrofitting of such structures to make them safer from the hazards of catastrophic fire within the Basin.

Certain building materials are highly susceptible to ember ignitions, which was a contributing factor to the loss of homes in the Angora Fire. Additionally, embers from burning homes ignited adjacent homes, indicating that using proper building materials reduces the risk to both that home and adjacent homes. California has utilized the scientific findings from studies of building materials to pass new building code standards, which require new homes to be built using materials that can resist ember ignitions. Residents on the Nevada side of the Basin should be provided with the same level of protection as those on the California side. Additionally, there are actions and modifications that owners of existing homes can take to help reduce their chances of ember

ignitions as well, including clearing roofs of flammable debris, installing double-paned windows, placing “flashing” between wood fences, decks, etc. and covering vents (i.e. attic vents) and open areas (i.e. under decks) with wire mesh. Local authorities in the Tahoe Basin have generally addressed new construction or substantial remodels of existing structures, but generally have not addressed the retrofitting of existing structures to meet current requirements for new construction or substantial remodels.

For example, most local authorities no longer allow wood shake or shingle roofs to be installed on buildings within the Tahoe Basin. However, notwithstanding the implementation of these requirements for new construction or roof replacements, there are thousands of structures within the Tahoe Basin having wood shake or shingle roofs.



Home burned in Angora Fire, June 2007

Christy Daugherty

Finding 18

Much of the Tahoe Basin public and private water distribution infrastructure is inadequate to provide the fire flows necessary to meet current fire codes and fire agency needs.

The vast majority of water distribution infrastructure within the Lake Tahoe Basin was intended to provide only domestic potable water, and was never designed to provide fire pressure flows necessary to meet current fire codes. For the most part, these public water systems represent an amalgam of previously small independently-owned water systems that have been interconnected into an aging and very complicated water distribution network. Since acquisition of these systems, and especially since the early 1990's, public agencies have made a significant investment in water infrastructure improvements in an attempt to close the gap between existing capability and that desired by fire agencies. Even with these significant improvements, the overall challenge is in excess of \$100 million and, at current funding levels, will likely take 20 years or more to complete. Additionally, there are a significant number of small private water companies with similar infrastructure and funding challenges. Collectively, these constraints substantially limit the ability of fire agencies to prevent structure fires from extending into the wildland urban interface (WUI) as evidenced by the 2007 Washoe Fire, while also hindering the suppression of large scale wild land fires in the WUI, as seen in the 2007 Angora Fire.

CATEGORY 4: FOREST AND FUELS MANAGEMENT

Finding 19

The 2007 Angora Fire has provided an opportunity to implement forest restoration techniques that can be a model for the rest of the nation. To be successful, however, efforts should be undertaken immediately to restore the forests burned in the Angora Fire.

Unless immediate steps are taken, the forested areas within the Angora Fire burn zone will lose commercial value, will exude excessive amounts of greenhouse gases as the remaining trees die and decay, and will result in the



Christy Daugherty

Masticator and salvage logging on CTC parcel, burned in the Angora Fire

conversion of the burned area to one of dead trees and brushland for many years. One estimate suggests that 98% of the greenhouse gases released by the 2007 fire could be recovered over time by salvaging fire killed timber and restoring the forest. In addition to these benefits, by providing for appropriate harvesting of the remaining fire-damaged and dead trees and undertaking restoration efforts, a healthy, fire-resilient forest will return to the area,

along with its attendant benefits to the community and the Lake. There is need for immediate action, as the commercial value of the remaining burnt trees diminishes quickly as bark beetles and other infestations attack the weakened trees. The present commercial value of the lumber that can be salvaged, if such efforts are permitted to be undertaken right away, should pay for the costs of such removal and a significant portion of the costs of restoration of the burned area.

It is not the intent of this Finding that any recommended action herein supplant or result in the modification of the USDA Forest Service South Shore Fuel Reduction Project that is currently under way.

Finding 20

Fuel reduction treatments implemented on National Forest System urban intermix parcels within the Angora Fire reduced fire behavior from crown fire to surface fire as designed.

The USDA Forest Service, Lake Tahoe Basin Management Unit (LTBMU) manages small segments of urban forest, commonly referred to as urban lots or urban intermix lands. These lands were acquired to protect them from development and to protect water clarity for the purpose of preserving the hydrologic function of sensitive lands and conserving natural forest conditions within the urban setting. The LTBMU has been implementing fuel reduction treatments on these urban intermix parcels since 1995. The fuel reduction treatments being implemented are designed to: (1) reduce the potential of catastrophic wildfire effects by making crown fires less likely, (2) improve defensible space protection to adjoining private lands; and (3) enhance forest ecosystem health.

During the 2007 Angora Fire, parcels that had been treated exhibited modified fire behavior, including reduced ember production, and reduced heat and smoke allowing firefighters to be more effective. Treated parcels also served as fuel breaks, allowing firefighters to safely protect structures and slowing fire spread. Eyewitness accounts, firefighter interviews and post fire on-site inspections indicated a significant

reduction in fire intensity when fire entered treated urban lots (flame lengths were less than 4 feet). The exception was those lots on steep slopes that burned similar to areas without treatment. Of the 129 National Forest System urban parcels burned within the Angora Fire perimeter, only two showed crown fire intensity.



Kathy Murphy

Treated US Forest Service urban lot that experienced surface fire during the Angora Fire

Finding 21

Forest thinning and the institution of healthy forest management and maintenance practices are essential to restoring health to the forests of the Lake Tahoe Basin in order to protect against the hazards of catastrophic fires. There is an immediate need to implement both short-term solutions and long-term programs in order to prevent the devastating impacts on the Lake and its residents that catastrophic wildfires would create.

The forests within the Tahoe Basin are substantially different today than the forests that existed in the Basin prior to European/ American settlement (prior to 1870). Prior to European/ American settlement, low intensity fires burned every 5 to 18 years in the lower elevation pine and mixed conifer forests of the Basin, resulting in a forest consisting of widely-spaced conifer trees with a poorly developed shrub understory.

Between 1875 and 1895, large scale timber harvesting, including clear-cutting of many Basin forest areas, removed most of the widely-spaced trees around the Lake. Although forest stands successfully regenerated, the past 50 years of fire suppression and a reduced emphasis on forest management on public lands within the Basin has resulted in much denser forests (up to 4 times the pre-1870 density in lower elevation forests and twice the density in higher elevation forests); and abnormally increased build-up of fuels within the forests and resultant increased risks from fire.

Further adding to the severe fire hazards within the forests of the Tahoe Basin are the following circumstances resulting from the increased density of the forests:

- (a) Current forest stands exhibit a 70% higher disease incidence and a 5% greater mortality than remnant old growth stands in the Basin;
- (b) High rates of tree mortality, particularly white fir, have greatly increased the number of standing dead trees and downed logs;
- (c) Smaller, mid-story trees create fuel ladders that allow fires to readily move into dense crowns;
- (d) The lack of frequent low intensity fires has resulted in accumulations of dead fuels, increased understory shrubs, and dense young trees. As a result, flame lengths and rates of fire spread lead to higher intensity fires, leading to a greatly elevated risk of crown fires throughout the Basin.

When the TRPA was created, the prevention of catastrophic fire to the Tahoe Basin was not considered or addressed. Since then, forest fuels build up has occurred as the result of unintended consequences of regulatory efforts to curb erosion by making the

removal of forest fuels difficult, if not impossible, to undertake, and by the efficiency of federal and local fire prevention efforts to eliminate fires within the Tahoe Basin. Due to a number of conditions, including insect infestations and drought, circumstances have changed since the TRPA was created and now the threat of massive, catastrophic fires poses risks to public safety, property, and the environment of the Tahoe Basin never imagined by the creators of the Tahoe Regional Planning Compact.

Recognizing these changed circumstances, the TRPA Governing Board, beginning in 2002, adopted various resolutions making the avoidance of catastrophic fires within the Basin the number 1 priority of the TRPA. More recently, since the Angora Fire, the TRPA has created “Catastrophic Wildfire Prevention Committee”. These efforts are to be applauded. However, there continues to be a need for the TRPA, as the only regulatory agency having jurisdiction over all parts of the Tahoe Basin, to exercise leadership in addressing the hazards of catastrophic fire to the environment as well as to public safety, by assisting all property owners, land managers, agencies, and governmental authorities in the Basin as they try to implement sound practices to eliminate or avoid, to the extent possible, the risks of catastrophic fire.



US Forest Service

View of Glenbrook Bay, circa 1890s (above) and the same view blocked by trees in recent photo (below)



Finding 22

The *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* provides a method to prioritize and coordinate fuel treatment work across ownership boundaries in Lake Tahoe Basin.

This multi-jurisdictional “10-Year Plan” was developed and supported by 17 partner agencies with fire protection, land management, and regulatory responsibilities in the Lake Tahoe Basin. The Plan is designed to facilitate the strategic decisions that must be made by these agencies to reduce the probability of catastrophic fires in the Basin. It was developed to comply with the White Pine County Conservation, Recreation, and Development Act of 2006 (Public Law 109-432 [H.R. 6111]). It comprehensively combines all existing plans that have been developed within the Basin to date, and provides a framework for participating agencies to identify priority areas and a strategy to work collaboratively to accomplish those priorities.

Finding 23

Woody biomass processing is an essential component of restoring healthy forest conditions, reducing the severity and intensity of future wildfires, lowering air and water pollution, and has the potential for managing greenhouse gas reduction in the Tahoe Basin.

For several years, all Tahoe region agencies’ priorities have included fire danger reduction through restoring healthy forest conditions with the removal of the unnatural accumulation of fuels. With the implementation of the new *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*, it is expected that significantly more biomass will be generated. This will require large amounts of removal and disposal, or utilization. Because this material currently has very little commercial value and the cost per acre can be higher in sensitive environments due to limitations on the use of mechanized equipment and limits on the use of prescribed burning to meet both ecological and fuel reduction objectives, most agencies and landowners are faced with the expense of: 1) disposal by burning, 2) potential disposal to a landfill (although not practiced in the basin), 3) chipping and spreading, or 4) transporting it to green energy facilities for conversion to renewable energy, an option that facilitates utilization, not disposal. However, there are currently no biomass-to-energy processing facilities in the Tahoe Basin for several reasons, including: 1) limited access to materials, 2) cost of acquiring woody biomass, and 3) lack of a consistent, adequate supply of biomass materials for processing. Forest treatment and air quality permitting and enforcement protocols can create uncertainty, delay, and expenses that discourage biomass operations.

Finding 24

Fuel treatments including prescribed fire and thinning have proven to be effective at modifying fire behavior during extreme fire conditions. These fuel treatments provide a safe area for firefighters to operate and improve the chances of tree survival following catastrophic fire.

A century of fire suppression has led to an over crowded forest and an increase in fuel loadings over historical levels. The role of natural fire has been eliminated. Fuel treatments in the Angora Fire were proven to be effective at modifying fire behavior under extreme conditions except in areas of steep slopes (USDA, *An Assessment of Fuel Treatment Effects on Fire Behavior, Suppression Effectiveness, and Structure Ignition on the Angora Fire*, 2007). Areas without fuel treatments, including SEZs, experienced stand replacing fire. There are numerous additional examples on other wildfires where this same observable fact has occurred.



Kathy Murphy

Area of brown trees is a USFS fuels treatment where crown fire was reduced

Prescribed fire restores native forest conditions, protects the forest from catastrophic wildfire, and is often the most cost effective means to reduce the build-up of fuels. The effects of low to moderate intensity prescribed fires are very beneficial to the ecosystem, contrary to the often negative effects of high intensity wildfires.

Prescribed burning is a critical tool that can be used to restore and maintain ecosystem components including vegetation, soils, watershed function, aquatic organisms, insects, diseases, and terrestrial animals and their habitats.

Prescribed fire also protects human elements of life, property and cultural resources from damage by future wildfire, by decreasing surface fuel loading and potential wildfire intensity.



California Dept. of Forestry and Fire Protection

Prescribed fire for fuels management in the Tahoe Basin

Finding 25

Low emission fuel reduction techniques minimize health-based air quality issues and visibility impacts when used, while reducing the forest fuel load.

The Lake Tahoe Area Air Quality Working Group identified three uses for disposal of forest fuels which do not depend on favorable meteorological dispersion conditions. The first is the use of air curtain burners as a viable solution for forest fuel reduction efforts. These devices have been successfully used in the Tahoe Basin for fuel reduction efforts. Since air curtain burners are not restricted to the California burn day status it is possible to increase the amount of material that can be burned on days when open pile burning cannot take place. The second is utilization of forest fuels for firewood. Currently some firewood is imported into the Tahoe Basin for home heating, camp fires and recreational fires. This firewood is purchased at local stores or through private parties and adds to the existing fuels burned in the Basin. If firewood used for heating and recreational purposes were acquired within the Basin it would reduce the amount that is burned in open burn piles. The last is utilization of chipped or masticated forest fuels as cover for best management practices (BMPs) and/or landscaping.

Finding 26

In order to optimize burn windows for prescribed fire activities within the Lake Tahoe Basin, more comprehensive air quality and meteorological information is necessary in order to obtain more detailed analysis of air quality conditions.

A more comprehensive routine evaluation of atmospheric conditions in the Lake Tahoe Air Basin may result in increased burning opportunities in both California and Nevada. Real-time monitoring of fine particulates (PM2.5), web cams, smoke dispersal modeling, and additional meteorological data can provide more specific information that can be useful in making burn day determinations and more comprehensive evaluation of atmospheric conditions for burning in both California and Nevada. The



California Dept. of Forestry and Fire Protection

Sun filtering through smoke during a prescribed fire for fuels management in the Tahoe Basin

recent application of real-time PM2.5 monitoring, better access to meteorological data and web cams in the Southern Sierra has resulted in additional burn days and confidence in marginal conditions through immediate feedback during burn operations. In the Sequoia National Forest, a monitoring pilot project is in use, allowing air regulators and National Forest staff to view a burn and monitor the PM2.5 conditions throughout the day. The information is then used on a daily 1 p.m. conference call between meteorologists, burn agencies and air regulators to make coordinated decisions with respect to smoke conditions and weather forecasts.

Finding 27

There are not enough available burn days to accomplish hazard fuel reduction in the Lake Tahoe Basin in a timely manner. Atmospheric conditions and air quality determine the amount of burning that can take place on a given day without adverse impacts to air quality. If not carefully managed, smoke can result in human health impacts that may range from a minor nuisance to serious health effects.

On the California portion of the Lake Tahoe Air Basin, the California Air Resources Board (CARB) oversees a collaborative smoke management program in which state and local air quality agencies work together with land managers to match prescribed burning and other open burning activities with appropriate atmospheric conditions in order to minimize smoke impacts and protect public health. CARB meteorologists utilize specific criteria such as mixing heights and wind speeds in conjunction with air quality data to determine the daily agricultural burn day status for the Basin. In recent years, CARB has incorporated additional meteorological information into the forecasting process, which allowed the implementation of marginal burn days during which the burning of smaller amounts of material is allowed when the likelihood of creating a smoke nuisance is minimal. Since 2002, the average number of permissive burn days has increased by more than 10%, and more than 15% over the most recent three-year period.

Finding 28

Currently, there is no single source or site that offers comprehensive public information about fuels treatment, prescribed burning, smoke management, and public health for the Lake Tahoe Basin.

Many federal, state, and local agencies have created limited publications and websites that provide the public with information on fuels treatment, prescribed burning, smoke management, and their effects on public health. There is no centralized location where information can be easily accessed to educate, inform, and involve agencies, residents and visitors in the Lake Tahoe Basin.

Finding 29

Air quality management agencies in Nevada do not regulate burn and no burn days, rather it is left to the land managers' discretion to ignite prescribed fires only when conditions are acceptable. This allows land managers greater flexibility to effectively and efficiently reduce forest fuels within their jurisdictions.

In Nevada, the Washoe County Air Quality Management Division (WCAQMD) is responsible for air quality management in that portion of the Tahoe Basin within Washoe County, while the Nevada Division of Environmental Protection (NDEP) has jurisdiction over the remaining area comprised of Carson City and Douglas County. Both of these agencies implement similar EPA approved Smoke Management Programs with compliance

garnered through an MOU entered into with the primary land management agencies in the Tahoe Basin. In accordance with provisions specified in the MOUs, land managers must apply for a burn permit from the applicable regulatory agency for prescribed burning projects.

Submittal of an accompanying smoke management plan may also be required, depending on the size of the prescribed fire and the distance to air quality non-attainment areas. Permits are then issued by the air regulatory agencies. Burn day forecasts are not issued in Nevada as they are in California. Rather, it is incumbent upon the land managers to ensure that meteorological conditions are favorable, from an air quality perspective, prior to ignition of the prescribed burn. Smoke complaints received from residents are minimal each burn season and agencies conducting the burns have been found to respond quickly and address the issue.



US Forest Service

Prescribed burn for fuel reduction, Lake Tahoe Basin

Finding 30

The utilization of temporary access roads for mechanized harvesting equipment in the Lake Tahoe Basin is critically necessary to reduce the risk of catastrophic wildfires, to protect lives, property and the unique environment of the Lake Tahoe Basin, and to improve the health of its forests.

The continued degradation of forest health in the Lake Tahoe Basin and a corresponding extensive build up of highly flammable fuel predisposes the Basin to catastrophic wildfires. While ongoing efforts to address the situation are commendable, the magnitude of the problem far exceeds current access capabilities. Much of the biomass to be removed from the Lake Tahoe Basin and is not in the proximity of the existing road system and the physical capabilities of hand crews on foot. Current erosion control and hydrologic technologies, when properly implemented, maintained and monitored will prevent impacts to water quality. Reclamation of temporary access roads would potentially have some minimal short term aesthetic impacts, but the long term forest health benefits and the reduced risk of catastrophic wildfire far exceed short term concerns. Tahoe Basin regulatory agencies state that the

construction of temporary access roads is technically allowable under current codes and regulations. In reality a functional prohibition exists regarding temporary access roads and the use of mechanized equipment as currently managed by the regulatory agencies. It is simply impossible to address the magnitude of the forest health and fuels problems with hand crews and pile burning. Pile burning has associated impacts to air quality and with a limited number of burn days

numerous piles are waiting

to be burned adding further to the potential for catastrophic wildfire.



Crews hand-thinning for fuel reduction

A well planned, rapid and efficient approach to implementing forest health and fuel reduction projects through temporary roads and mechanized equipment use that mitigates potential environmental impacts is necessary. Continuation of current practices and regulations will perpetuate the degradation of Lake Tahoe Basin forests and the high risk for catastrophic wildfire.

Finding 31

The Lake Tahoe Water Quality 208 Plan, as adopted in 1988, increases the cost and reduces the effectiveness of fuels treatments because machine operations in SEZs are prohibited.

An example of this problem includes the difficulty of conducting fuel reduction activities under the category “over the snow conditions”.

Temperatures and snowfall are unpredictable at lake level. Applied to fuels treatments, this prescriptive language has led to a proliferation of exemptions, waivers, and project requirements by the Lahontan Regional Water Quality Control Board (LRWQCB) resulting in many proposed fuel reduction projects being abandoned because of unwarranted cost of money and time.



Christy Daugherty

Untreated forest within stream environment zone

Agency personnel and field practitioners involved with preparing and managing fuel reduction and forest health projects have stated that permitting times and requirements, and therefore costs, are higher in California compared to Nevada. The root problem stems from the layering of regulatory processes in California having both the Tahoe Regional Planning Agency

(TRPA) and the Lahontan Regional Water Quality Control Board (LRWQCB) involved in permitting projects when stream environment zones (SEZs) and slopes over 30 percent are involved. In Nevada, the TRPA is the single regulatory agency for permitting work under the Lake Tahoe 208 Water Quality Plan which encompasses the entire Tahoe Basin Watershed. Wetland and secondary SEZs are described in the 208 Plan and there has been testimony to the Wildland Fuels Committee that the SEZ indicators (soil, vegetation, moisture content etc) will be updated. The TRPA is more effective than the LRWQCB for developing and interpreting regulations because they are a multi-disciplinary agency that considers all of the environmental consequences of their decisions. The LRWQCB is narrowly focused on water quality issues in one state and appears rarely to consider the full range of the environmental consequences of its decisions. The

updating of the 208 plan creates opportunities to eliminate the prescriptive “over the snow” requirement, to design requirements to specifically allow use of mechanized equipment designed for low impact operation on sensitive soils, and to codify BMP requirements specifically designed for wildland fuels, forest health, and watershed restoration projects.



Kathy Murphy

Ash-covered untreated stream environment zone burned in the Angora Fire

Finding 32

Many critically needed fuel reduction projects located in stream

environment zones (SEZs) require the use of mechanical equipment in order to be completed. However, existing regulatory permitting procedures and restrictions on the use of such mechanized equipment in SEZs are impediments to fuels removal projects in such areas. Fuels removal projects in SEZs can be effectively accomplished using mechanized equipment and ground protection techniques of a kind and in a manner that will adequately mitigate short-term soils compaction and disturbance, thereby reducing

negative water quality impacts from such activities. Completion of these projects, to the extent made possible by the capabilities and efficiencies of readily available mechanized equipment, will provide long-term protection of water quality from the effects of catastrophic fire affecting large areas of the Tahoe Basin than would be possible if such readily available mechanized equipment is continued to not be permitted to be used in the SEZs.

SEZs in the Lake Tahoe Basin pose both extreme fire risks and extraordinary environmental challenges. In times of fire, such as both the November 2002 Pioneer Fire and the Angora Fire, the fires quickly changed from surface fires to crown fires because untreated SEZs allowed fire to quickly move through overstocked and insect diseased forested areas. Commentators have referred to the SEZs in these areas as operating like “candle wicks” during times of fire, advancing the severity of crown fires. SEZs are also pathways through which sediment travels into the Lake, thereby directly affecting Lake clarity.

Removal of fuels from and restoration of SEZs is necessary in order to reduce fire hazards, particularly in SEZs located within or leading into or out of communities, and within the Wildland Urban Interface (WUI) surrounding such communities. For example, in Lake Valley Fire District the fuel reduction treatment needed in SEZs comprise over 40% of the project area. Unless such efforts are quickly undertaken, the SEZs will continue to pose significant and unacceptable fire risks to communities in the Lake Tahoe Basin.

Protection of the Lake’s clarity should continue as one of the TRPA’s top priorities, but it is not and should not be the only priority of the TRPA and the potentially devastating impacts of catastrophic fire on the clarity of the Lake’s water should not be overlooked by the TRPA and other agencies having jurisdiction over environmental matters affecting the Tahoe Basin. Protection of life and property from catastrophic fire is and should be of greater priority to the TRPA and other agencies having jurisdiction over environmental matters within the Lake Tahoe Basin. Further, given the fire hazards posed to communities within the Basin by untreated SEZs, there are substantial and unnecessary risks posed by fire within and surrounding the populated areas within the Basin.

In the past, many fuel reduction projects contained within SEZs have either not been performed due to regulatory restrictions on the use of mechanized equipment or were required to be performed by hand, leaving burn piles in areas immediately adjacent to the SEZ for future elimination. Many areas needing fuel reduction treatments were simply not treated because hand-thinning methods were either unsafe or too expensive, or were not feasible due to the sizes of the trees needing removal. Many burn piles of accumulated fuel materials have been left unattended adjacent to SEZs because of restrictions on the use of vehicles and

readily available fuels treatment equipment. The need to carry burn pile materials out, as opposed to burning them in place, has been a further cost prohibitive issue for projects in SEZs.

Even though the Lahontan Regional Water Quality Control Board (LRWQCB) regulations have allowed limited exemptions for use of equipment in SEZs since 1994, only 4 projects have been brought before the LRWQCB Board for action. The reason for so few projects is that all were pilot projects, and the conditions for use of innovative technology vehicles acceptable to the LRWQCB have proven to be so cost prohibitive as to amount to a prohibition of any vehicles within SEZs. In testimony, the LRWQCB staff has stated that they are not willing to challenge themselves with more difficult equipment use projects. Specifically, they would not take the time to define innovative technology” vehicles and/or were unwilling to accept project proponent arguments that existing, proven, low impact equipment met the LRWQCB requirement as being innovative.

Similarly, there are no quantitative measures or BMP’s to address the vague codified requirements of “significant soil disturbance”, “sufficiently dry” or “minimize compaction” leaving project implementers with great uncertainty in designing project implementation and monitoring requirements. Several proponents of SEZ treatment projects have indicated that they were informed by the LRWQCB staff that their projects would not be permitted under timber waiver procedures. Discussions with proponents indicate that this dialogue has resulted in at least 50 SEZ clearance projects being dropped or simply not pursued. A minor 23-acre USFS pilot project required over a year and a half of negotiations before being approved. The LRWQCB applies the standard of “no permanent soil disturbance” in analyzing requests for SEZ treatment projects, while arbitrarily interpreting the word “permanent” as constituting an impact that is of “less than a year” in duration. The word “permanent”, by any common definition, means something that is perpetual, constant, unchanging, and everlasting. Such subjective interpretations by the LRWQCB of terms that are seemingly are quite clear by common definition, have resulted in misunderstandings and confusion by the public and those who must comply with such apparently subjective standards.



Christy Daugherty

Chipper clearing vegetation in the Tahoe Basin

In fact, very few projects have been approved that allow for the use of vehicles and equipment in SEZs due to complexities and delays in the permitting process and the lack of availability of low impact equipment meeting the restrictive standards applied by the LRWQCB and/or the TRPA. Private fuels removal contractors are generally unwilling to undertake SEZ clearance projects due to the complexities and delays in the permitting process and the inconsistent and subjective interpretations of standards that must followed within SEZs.

Finding 33

The Lahontan Regional Water Quality Control Board has interpreted their regulations to prohibit pile burning in stream environment zones (SEZs). The spreading of chips in SEZs has also been prohibited in most circumstances. This interpretation of the rules creates operational burdens by requiring all material to be removed from the SEZs for disposal.

Due to restrictions on equipment use in SEZs, material is generally removed from these areas using hand crews. Once material is removed from a SEZ by hand, it is either piled and burned or chipped. Due to restrictions regarding the spreading of chips in SEZs, chips must be spread in a non-SEZ area or removed from the site. Chips removed from SEZs must be transported to designated locations for disposal. There is presently a lack of disposal sites in some areas of the Basin. The use of hand crews to remove material from SEZs for disposal creates many operational and safety challenges and has proven to be costly and time consuming, yet there is no documented evidence of permanent adverse impacts from the piling and burning, or the spreading of chips in SEZs within the Tahoe Basin.

Finding 34

One of the limiting factors for adequate, timely and cost effective forest treatment in the Lake Tahoe Basin is the lack of adequate data on the impacts of mechanized and other types of forest thinning on water quality and soil health.

In 1999, a group of individuals interested in improving erosion control practices in ski resorts began a process that has led to the California Alpine Resort Environmental Cooperative, which produced the *Sediment Source Control Handbook*. This effort is based on finding common solutions through a collaborative process, using a science-based approach to do so, following an adaptive management process and using a broad range of field plots and direct measurements to test specific hypotheses.

A great deal of discussion has taken place about which forest clearing/fire reduction strategies are the most effective and what relative effect each has on water quality. During preparation of the Tahoe Total Maximum Daily Load (TMDL) Document for Forest Uplands, it became apparent that very little actual research has been done on forest

thinning practices currently in use or suggested for the Lake Tahoe region. Parallel to these discussions, a great deal of concern exists regarding regulatory agency standards for accepting some of those strategies, especially regarding heavy equipment. This concern centers around the impacts that heavy equipment may have on soil compaction and thus water quality. Land managers and regulatory agency personnel must begin to test, measure and develop a better understanding of a variety of forest thinning tools.

Finding 35

The current system in place to monitor the implementation of fuel reduction projects places an undue burden on the individual contractors and non-federal entities that implement the projects.

Fuels treatment projects have been conclusively demonstrated to reduce the fire severity of wildfires including fuels treatment projects associated with the 2007 Angora Fire. Monitoring the implementation and effectiveness of fuels treatment projects in the Basin is an important activity that will assess the implementation and effectiveness of treatments and thus allow for adaptive management. Monitoring is also important to assure stakeholders and sponsors that allocated

funds are well spent. However, many small entities such as Fire Safe Councils and fire departments do not have staff qualified to undertake more complex types of data collection such as in-stream water quality monitoring. These additional monitoring requirements impede project implementation by taking up staff time and reducing the number of projects that may be undertaken within

US Forest Service



Tahoe parcel before treatment

the Basin. The application of adaptive management science to protect the Tahoe Basin environment is jeopardized when complex monitoring data collection responsibilities are not placed on those most qualified to conduct them.

Finding 36

Currently under California Public Resources Code, Professional Foresters Licensing Law, the fire services cannot consult with private property owners about mitigating the fire hazard posed by undeveloped urban lots without employing the services of a California Registered Professional Forester.

California Public Resources Code and the Professional Foresters Law requires a California Registered Professional Forester consult with landowners about reducing fuels on small undeveloped urban lots in cases where the homeowner requests advice. The current interpretation of “devoted to urban uses” in the Professional Foresters Law excludes these small urban lots. There is currently a scarcity of Registered Professional Foresters in the Lake Tahoe Basin and the work of marking trees on small undeveloped urban lots does not fit the typical work that Registered Professional Foresters desire. The net result of the California Public Resources Code (PRC 750-783) requirement that Registered Professional Foresters consult with landowners about fuel loading on small undeveloped urban lots has resulted in a lack of fuel reduction work taking place on those lots and this results in an unsafe condition within urban areas.



Tahoe parcel after treatment

US Forest Service

CATEGORY 5: FIRE SUPPRESSION

Finding 37

The level of wildland fire protection on the California side of the Basin in “State Responsibility Areas” is below the basic 24/7 all-risk standard experienced elsewhere in California.

As a result of the “balance of acres” arrangement between state and federal fire protection agencies in California, property owners on the California side of the Lake Tahoe Basin receive services at a level which is lower than the standard elsewhere in California. In other areas of California, property owners in “State Responsibility Areas” receive 24/7 all-risk protection by the state’s fire department, CAL FIRE. In many cases where there is an organized local fire protection district, the local and state agencies cooperate in delivering programs, including fire prevention and multi-hazard fire and rescue services. The lead on multi-hazard structure fire and rescue services comes from local government, while wildland fire protection comes from CAL FIRE. In many cases local government’s ability to provide statutory mandated services is constrained by the shift of local property tax dollars to the State of California. This leaves a reduced ability for local government to participate in 24/7 wildland fire protection.

Under the state/federal “balance of acres” agreement, CAL FIRE has no fire protection resources stationed in the Basin. Instead, wildfire protection in the Basin is provided by the U.S. Forest Service’s Lake Tahoe Basin Management Unit (LTBMU), which generally operates in 10-12 hour shifts with after hour response times exceeding that which would otherwise be provided 24/7 by CAL FIRE. If a vegetation fire occurs after the LTBMU is off shift, local government is relied upon by Cooperative Agreement for initial response. So long as local government is available to assist, the arrangement has managed to work over the years. However, should local government not be available, an unacceptable amount of time can occur before initial attack forces arrive on scene of the fire by out-of-area automatic and mutual aid forces.

Finding 38

No State of California (CAL FIRE) Fire Station currently exists in the Lake Tahoe Basin.

No CAL FIRE engines or fire stations are currently located in the Lake Tahoe Basin. During meetings of the California-Nevada Tahoe Basin Fire Commission, the Tahoe Basin Fire Chiefs have advocated for full time staffing of a State of California fire station during declared fire season. Although there may be part-time space available at existing local fire stations, construction of a new State fire station may become necessary. The best long-term location for a new CAL FIRE station may be on State-owned property, if a suitable location can be determined. If a suitable location could be found on State Park property, a collaborative agreement could be formed between CAL FIRE and the California Department of Parks and Recreation. The prescribed fire program on State Parks would benefit greatly from additional resources provided by CAL FIRE.

Finding 39

The temporary placement or permanent stationing of a USDA Forest Service Type 3 engine proximal to the North Shore would improve wildland fire response times and coverage.

Currently the Forest Service has four 5-person, 7-day effective Type 3 engines at three stations which are fully staffed during the normal fire season. Two of these engines are currently located in Meyers, one engine in Meeks Bay and one on Spooner Summit. The Unit also has one 20-person suppression crew and a 10-person fuels crew with a tactical water tender and a Type 6 engine located at Meyers Work Center. Ideally, fire stations would be located on all four shores of Lake Tahoe. Currently, only three of the four shores of the lake are covered, with two of the four fire engines stationed on the South Shore where most of the



US Forest Service engine crew on Gondola Fire, July 2002

California Tahoe Conservancy

ignitions have historically occurred. Since 2002 discussions regarding the placement of an engine on the North Shore (Tahoe City) and the development of a new fire station in conjunction with the North Tahoe Fire Protection District area have occurred. The continued dialogue has been positive and encouraging. However, there are internal financial issues to resolve regarding lease options and specific space requirements for the Forest Service engine and crew.



Christy Daugherty

Air tanker dropping retardant over Cathedral Fire, September 2006

Finding 40

Equipping the Nevada Air National Guard in Reno with the Modular Airborne Fire Fighting System would improve wildland firefighting capabilities in the Tahoe Basin.

The 152 Airlift Wing includes the 192nd Airlift Squadron which flies the C130H. The C130 is a proven airborne firefighting system. Stationed out of the Reno-Tahoe International Airport, the squadron is ideally positioned to provide aerial assets to the Tahoe basin as well as a large portion of the western United States. Beyond the capability of the C130 to deliver retardant, the Reno based C130s are equipped with the infra red surveillance system.

Finding 41

While the fire service has universally adopted the “closest forces” concept to insure the rapid initial attack of all wildfires, jurisdictional boundaries have prevented closest forces being utilized effectively in the Lake Tahoe Basin.

The recognized key to keeping wildfires small is a rapid and strong initial attack capability with aircraft, engines and hand crews. Federal, state (Nevada and California) and local governments maintain a wealth of resources both within and immediately adjacent to the Lake Tahoe Basin. Aircraft, typically helicopters and single-engine air tankers, are typically available at the Minden Airport minutes from the Lake Tahoe Basin.

The Geographical Area Coordination Centers and Interagency Dispatch Centers have agreements in place to access each other’s suppression resources, but the operational “closest forces” concept is not being utilized consistently as demonstrated in both the Gondola and Angora Fires. Dispatch Centers do not reliably communicate the availability of resources or status them for initial attack responses across boundaries. While attempts have been made in the past to address this issue, the problem remains and a permanent resolution should be implemented rapidly.

Finding 42

Interagency communications during wildland fire occurrences is at times delayed and confusing.

Recent wildland fire responses by federal, local and state resources have been confusing due in part to the number of dispatch centers. Currently, firefighting resources assigned to the Tahoe Basin may be dispatched from as many as four dispatch locations in California and three in Nevada. Agreements between all the agencies are in place whereby, upon a dispatch going out from one of the dispatch centers, that center will immediately notify the Camino Interagency Dispatch Center, which will then serve as the single point for additional dispatches and ordering of additional resources. However, the numerous dispatch centers have not always abided by these agreements, sometimes delaying notification to the Camino Center by as much as several hours. This causes confusion in ordering of additional resources for the incident and confusion as to which agency is responsible for the resource orders associated with the incident.

CATEGORY 6: FUNDING

Finding 43

Fuel reduction and forest restoration efforts in the Lake Tahoe Basin require consistent and sustainable funding mechanisms.

Land management agencies must be able to plan forest fuel reduction projects on a long-term schedule to reach strategic objectives in the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* and to generate a sustainable market that will insure reliable contractors are available to work in the Lake Tahoe Basin. Much of the funding for fuel reduction and forest restoration efforts in the Lake Tahoe Basin has been generated through the Southern Nevada Public Land Management Act (SNPLMA). The Act is not a permanent funding mechanism and requires annual funding requests that compete with non-fire/fuel reduction efforts. Alternative annual funding is needed to provide a continuing, sustainable source that land managers can depend on to implement and maintain these resource management efforts.

Finding 44

Public agencies have proposed to reduce fuel hazards and restore forests on approximately 68,000 acres over the next 10 years at an estimated cost of approximately \$230 million, as more fully set forth in the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*. The Commission finds that the “10-Year Plan” is well done, and should be implemented to the maximum extent possible by the relevant governmental authorities and entities within the Lake Tahoe Basin. It is noted by the Commission that the “10-Year Plan” for fuel reduction projects in the Lake Tahoe Basin is a strategic document and that fuels project locations, treatment prescriptions, and implementation methods may change as tactical plans are developed. Therefore, the Commission’s funding estimates do not purport to address funding needs of all worthwhile fuels projects in the Basin, and additional funding for such projects should be anticipated as such strategies are developed.

In addition to costs identified in the “10-Year Plan”, additional funding will be necessary to accomplish other necessary tasks that have been identified by the Commission to reduce risks and restore the forests of the Basin. These additional costs will have to be borne by all stakeholders within the Basin. Fuel reduction and forest restoration efforts in the Lake Tahoe Basin require consistent and sustainable funding mechanisms.

Finding 45

Funding for forest health and fire pre-suppression for the Lake Tahoe Basin is insufficient and inconsistent. In order to protect lives, property and the unique environment of the lake and basin, a long term stable and consistent source of funds must be secured.

It is widely recognized that the health of the forests in and around the Lake Tahoe Basin is poor. Couple this with significant intrusion of homes and businesses into the wildlands and fire presents a significant potential risk to lives, property, water quality and the other natural values present within the Basin. To improve forest health, prescribed fire, forest thinning, and biomass removal must be accomplished at a significant cost per acre. This is not a one time event. Ongoing maintenance of the forests must occur on a periodic basis, again at substantial cost. A variety of sources are currently funding forest health work within the Lake Tahoe Basin. Unfortunately, these funding sources are short term and not consistent over time; just the opposite of what is needed to ensure healthy and sustainable forests. A long term sufficient and consistent source of funding is needed.

Finding 46

There is currently inadequate funding for fuel reduction projects in the Lake Tahoe Basin, as identified in the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*, and to support defensible space treatments on developed parcels located within the Basin. The Southern Nevada Public Lands Management Act (SNPLMA) funding is currently insufficient to fund the “10-Year Plan” due to slow land sales in Southern Nevada. SNPLMA funding has fallen well short of the amounts necessary to complete fuel reduction in the Lake Tahoe Basin.

The States of California, and Nevada and the local jurisdictions within the Lake Tahoe Basin currently invest significant funding in fuel reduction activities in the Basin. The U.S. Forest Service, the States of California and Nevada, and the local fire agencies are currently working to diversify their fuel reduction funding portfolios; however the completion of the necessary fuel reduction projects will require a multi-year process and an emergency situation exists today. Because an emergency situation exists in the Lake Tahoe Basin, and because the

excessive accumulations of forest fuels pose an imminent hazard to life, property and the environment; disaster mitigation funds should be allocated to Lake Tahoe Basin fuel reduction efforts.

Fuel reduction projects are most effective when located immediately adjacent to communities. In the past, legislation such as the Santini-Burton Act authorized the purchase of urban parcels by the U.S. Forest Service, California Tahoe Conservancy and Nevada State Lands. Additionally, a myriad of small Public Utility Districts and General Improvement Districts currently own land adjacent to communities or were consolidated into larger Public Utility Districts. Similarly, many of the Basin's communities are located within or comprised of planned unit subdivisions and are controlled by homeowner associations. As a result, there is a very complex arrangement of land ownerships around the communities of the Lake Tahoe Basin.

In response to this complex mix of land ownership, the public land managers and local fire agencies have formed a single fuel reduction oversight body and a project implementation team designed to implement projects without regard to jurisdiction. This Multi-Agency Coordinating group (MAC) oversees the Tahoe Fire and Fuels Team (TFFT), which manages both fuel reduction and defensible space projects. The Lake Tahoe Basin Fire Chiefs are currently formalizing this organization through the formation of a Joint Powers Authority (JPA).

The States, public land managers (excluding the US Forest Service) and local jurisdictions currently invest significant funding to the fuel reduction effort in the Lake Tahoe Basin. These



Angora Fire, Lake Tahoe, June 2007

Tahoe Regional Planning Agency

projects are now prioritized and coordinated through the MAC and TFFT. Present annual expenditures of state and local funds are approximately:

California Tahoe Conservancy	\$1,200,000
California Proposition 40 funds	\$ 760,000
California Prop 84 funds	\$ TBD
California State Parks	\$ 500,000
Nevada State Lands	\$ 100,000
Nevada Division of Forestry	\$ 600,000
North Lake Tahoe Fire	\$ 500,000
North Tahoe Fire	\$ 500,000
Tahoe Douglas Fire	\$ 250,000
South Lake Tahoe Fire	\$ 150,000
Lake Valley Fire	\$ 275,000
Meeks Bay Fire	\$ 75,000
Nevada Fire Safe Council	\$ 300,000
Private contributions	\$1,000,000
Total	\$6,210,000/+TBD

These expenditures result in forest fuel reduction on approximately 1500 acres annually, defensible space on approximately 700 parcels, chipping of hazardous fuels from defensible space from over 4000 private properties, organization of 26 community Fire Safe Chapters, and the management of seven 10-person hand crews that thin forests and also serve as fire crews.

This level of effort would likely be sufficient for the long term maintenance of fuel reduction efforts, once the current volume of fuel reduction and defensible space has been addressed. For that purpose, new funding sources from property tax assessments and fees are currently being pursued.

During the term of the current emergency, the communities of the Lake Tahoe Basin must undertake maximum efforts to secure long term funding to support ongoing maintenance. Until the current need for fuel reduction on State, municipal, and private lands is accomplished, the communities of the Lake Tahoe Basin, the environment, and lives of the Basin’s residents and guests remain at risk. Significant and reliable funding is needed to complete fuel reduction projects on state, municipal and private property identified in the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* for the Lake Tahoe Basin.

Finding 47

Requests for funding or approval of fuels treatment projects within the Tahoe Basin Wildland Urban Interface (WUI) should be given first priority by all funding sources, permitting agencies, and land managers in order to obtain maximum protection of the public's safety and property from catastrophic fire.

There are many fuel reduction projects to be performed within the Tahoe Basin, and virtually all areas of the Tahoe Basin are in need of such treatments. However, resources are scarce, and in some cases, the application of such resources must be prioritized. The permitting process relevant to such projects is cumbersome in many cases, and prone to delay. Accordingly, it is necessary to express a priority to those treatments that will most directly affect the protection of life and property.

Finding 48

There is a need to provide for local funding of fire prevention and fire safety projects in the wildland urban interface areas of the Tahoe Basin by the various counties and cities within the Basin. Special Assessment Districts or other similar funding mechanisms should be created and put in place to address fire prevention and fire safety.

Several of the local governments in the Basin have successfully implemented local funding mechanisms for fire safety and prevention projects. Similar funding mechanisms could be considered by all local governmental authorities in the Basin and, if necessary, the States of California and Nevada could provide specific authority for such funding methods by State law. Nevada law, as set forth in Nevada Revised Statute (NRS) Chapter 271, provides authority for such special assessment districts for certain "local improvements", but does not specifically identify fire prevention and fire safety as permissible projects for such funding activities. It may be necessary for the Nevada Legislature to adopt suitable legislative amendments to specifically provide for special assessments on the Nevada side of the Lake for fire safety and fire prevention matters within the wildland urban interface areas of the communities in the Basin.



Christy Daugherty

South Lake Tahoe

Recommendations of the California

Special Collections Department, University of Nevada, Reno Library



Fallen Leaf Lake and Lake Tahoe

We did not see a human being but ourselves during the next three weeks, or hear any sounds that were made but those by the wind and waves, the sighing of the pines, and now and then the far-off thunder of an avalanche. The forest about us was dense and cool, the sky above us was cloudless and brilliant with sunshine, the broad lake before us was glassy and clear, or rippled and breezy, or black and storm-tossed, according to Nature's mood; and its circling border of mountain domes, clothed with forest, scarred with landslides, cloven by canyons and valleys, and helmeted with glittering snow, fitly framed and finished the noble picture. The view was always fascinating, bewitching, entrancing. The eye was never tired of gazing, night or day, in calm or storm; it suffered but one grief, and that was that it could not look always, but must close sometimes in sleep...

Mark Twain

Nevada Tahoe Basin Fire Commission

The Commission offers 90 recommendations in the same six categories used for its findings:

Category 1: Environmental Protection

Category 2: Issues of Governance

Category 3: Community and Homeowner Fire Prevention

Category 4: Forest and Fuels Management

Category 5: Fire Suppression

Category 6: Funding

CATEGORY 1: ENVIRONMENTAL PROTECTION

Recommendation 1 *Regulatory Agency Coordination*

The unique water quality and clarity that make Lake Tahoe a natural resource of global significance are dependent on protection from catastrophic wildfires in the Lake Tahoe Basin, and all public land management agencies, regulatory agencies, and private property owners must work together more effectively to implement fuel reduction projects designed and prioritized to minimize the risk of wildfires.

Recommendation 2 *Natural Fire Resiliency*

The Commission finds that catastrophic wildfire is a growing threat to life, property, and the environmental quality of the Lake Tahoe Basin, and recommends that the restoration of the Basin's forests to a more natural and fire-resilient condition should be a common and primary management goal of all public land management agencies, regulatory agencies, and private property owners in the Basin.

Recommendation 3 *Reduce Greenhouse Gases*

California and Nevada should prevent catastrophic fires in the Lake Tahoe Region and reduce the associated greenhouse gas emissions through appropriate fuels management.

Recommendation 4 *Biomass Utilization*

In California, the Forestry sub-group of the Climate Action Team should develop coordinated measures for wildfire reduction and biomass utilization, while Nevada should continue to develop effective measures for wildfire reduction and biomass utilization. Both states should seek economic incentives, including accelerated depreciation of equipment, for biomass activities.

Recommendation 5 *Research Funding*

California and Nevada should direct forest research funding, as available, to address issues related to fuel reduction efforts, reducing emissions from decaying material, and carbon sequestration.

Recommendation 6 *Sharing Information*

The Commission recommends developing and maintaining a single clearinghouse, such as the Tahoe Integrated Information Management System (TIIMS), for compiling information on fuel reduction projects, including project effectiveness and environmental effects. The Commission further recommends that the USDA Forest Service in collaboration with the Tahoe Science Consortium and the general science community conduct a review of the available scientific literature that may be relevant to forest management practices in the Lake Tahoe Basin. The purpose of the review is to gain a comprehensive understanding of what past research, including studies outside the Lake Tahoe Basin, can be applied to the key forest management issues that land managers face in the Lake Tahoe Basin. Key topic areas include: impact of fire on air quality, key soil properties and conditions (biomass accumulation and fire), water quality and forest biomass management practices, fire and fuels management including vegetation and wildlife response. (This work was initiated in 2007 and is anticipated to be completed in 2008).

Recommendation 7 *Fuels Treatment Monitoring*

A Comprehensive Fuels Treatment Monitoring and Assessment Program should be created to track, assess and evaluate the extent of activities, fuel treatment effectiveness, cost effectiveness, regulatory compliance, environmental protection, and comparative risk to humans and the environment. Annual reports of these activities should be synthesized and presented to the Lake Tahoe Interagency Executive (TIE) and/or the Interagency Fuel Reduction Committee on an annual basis.

Recommendation 8 *Third Party Monitoring*

The Commission recommends that implementation monitoring, visual monitoring, and inspections be conducted by a third party where project proponents lack research expertise and monitoring experience.

CATEGORY 2: ISSUES OF GOVERNANCE

Recommendation 9 *Emergency Declaration*

The Governors of Nevada and California should each respectively declare a state of emergency exists in the Lake Tahoe Basin, and recommend to the President of the United States that a federal state of emergency declaration of emergency also be declared.

Recommendation 10 *Emergency Declaration Components*

The Emergency Declarations should at least address the following:

- Immediate emergency funding as recommended.
- Defensible Space should be achieved on every residential property within the Basin within 5 years.
- Development of a centralized information system to inform agencies and the public of defensible space requirements and to monitor the progress of such efforts.
- Urban fuel treatments should be accomplished on all public urban lots within 5 years.
- Fuels Hazard Reduction Treatments on the 68,000 acres of public open lands in the Tahoe Basin should be accomplished within ten years or earlier, if possible, and a realistic program be developed and implemented for maintenance of these publicly owned lands in a fire safe condition in the future.
- A sustainable biomass removal and/or elimination plan for the maintenance of these treatments should be developed and implemented.

- Ignition-Resistant building standards for all new construction within the Basin should be rigorously enforced.

- Ignition-Resistant roofing should be required on all structures throughout the Basin within ten years.



Christy Daugherty

Untreated stream environment zone

- Permanent funding partnerships between local, state, and federal revenues should be established as quickly as possible to maintain these risk mitigations.

- A wildfire risk model should be developed that incorporates forest fuels management, community safety actions, watershed health, and lake clarity within five years.

- Efforts should be immediately undertaken to restore the forests burned in the Angora Fire. Demonstration of Lake Tahoe as a national pilot model for wildland-urban-interface risk mitigation including public safety, healthy forest management, biomass sustainability, and watershed improvement.

- It is recommended to add CAL FIRE resource management, fire prevention and fire protection to the Lake Tahoe basin on a 24

hour-seven day a week basis during the period of time while permanent staffing is being evaluated.

Recommendation 11 *Oversight of Governors' Recommendations*

The States' Declarations should provide that California-Nevada Tahoe Basin Fire Commission should be continued or some similar group representing the Governors of the States of California and Nevada should be established in order to monitor the implementation progress of the Commission's recommendations that are acted upon by the Governors of California and Nevada.

Recommendation 12 *Environmentally Friendly Declaration*

The Emergency Declarations should not waive environmental processes that ensure water quality protections within the Basin, but should clarify the need for inclusion of wildfire risk into those analyses and the importance of moving quickly and without undue delay to ameliorate the risk of catastrophic fire to the Lake Tahoe Basin and its residents.

Recommendation 13 *Commission Report Distribution*

It is further recommended that copies of the Commission's final report be provided to all elected officials as requested, and to the members or appropriate representatives of the various administrative agencies having jurisdiction within the Lake Tahoe Basin, including the following:

- All county commissioners of the five counties located within the Basin.
- All city council members of the cities located within the Basin.
- All members of the Legislatures of the States of California and Nevada.
- All members of the Congressional Delegations of the States of Nevada and California.
- All members of the Governing Board of the TRPA; and
- All members or other suitable representatives of any State agencies having jurisdiction over all matters within the Basin relating to fire prevention and control, public health and safety, or the environment.

Recommendation 14 *Successor Commission*

The authority of the Bi-State Fire Commission should be extended or a successor commission be established by the Governors of the States of Nevada and California to oversee the recommendations to the Governors and to insure progress is made on their implementation. This successor commission should meet periodically and report on at least a yearly basis to the public and the Governors on the status of the implementation of the Commission's recommendations and on fire pre-suppression and forest health preservation efforts within the Lake Tahoe Basin. The successor Commission should have the following composition, with its members to serve at the will and pleasure of the respective Governors:

- 2 co-chairs, with one from each state
- 2 fire professionals, with one from each state
- 2 public members, with one from each state
- 1 federal representative to be appointed by federal authorities

It is further recommended that this successor commission be authorized to review and report on the status of the implementation of the recommendations and the goals set forth in the Commission's Report including, but not limited to, the specific goals set forth in the Commission's recommendations regarding Catastrophic Fire and Emergency Declarations.

Recommendation 15 *10-Year Plan*

It is recommended that the *Multi-Jurisdictional Fuel Reduction and Fire Prevention Strategy 10-Year Plan* be adopted and implemented by all appropriate governmental authorities and entities within the Lake Tahoe Basin in collaboration with all land owners and land managers within the Basin.

Recommendation 16 *Water Board/TRPA Policy Revision*

The Governors should require that the plans and policies of the Lahontan Regional Water Quality Control Board (LRWQCB) and the Tahoe Regional Planning Agency (TRPA) be updated to emphasize the importance of fuel reduction activities in the Tahoe Basin. Revisions of policies shall be focused on facilitating implementation of these projects, with the priority given to protection of life, property, and the environment, in that order.

Recommendation 17 *Simplifying Regulations*

The Governors should direct regulatory and implementing agencies in the Lake Tahoe Basin to simplify the existing system for permitting fuel reduction projects. Steps that should be taken to reduce or eliminate complexity, confusion, and redundancy shall include:

- A. The regulatory restrictions and limitations presently existing, even as presently modified by the TRPA and the LRWQCB, should be further modified, if not waived, on an expeditious basis and no later than the beginning of the 2008 fire season, to allow the use of readily available mechanized equipment and vehicles within SEZs to allow for the effective, efficient, and economical removal of hazardous materials. Restrictions regarding the use of mechanized equipment in such areas should be greatly and substantially reduced to make such cleaning and clearing activities within SEZs feasible over the period of time reasonably necessary to complete the Community Wildfire Protection Projects relating to the various communities located within the Lake Tahoe Basin.
- B. The commission recommends that the LRWQCB and the TRPA in cooperation with land management agencies develop a common list of accepted BMPs for mechanical work in SEZs that will be used beginning in the 2008 season to qualify as exempt and qualified exempt projects. In addition to the BMPs used in 2008, a reference guide defining equipment use in SEZs shall be developed by March 2009 and reviewed and updated as new information is collected. This guide will be completed through a cooperative inter-agency effort. The TRPA and the LRWQCB MOUs shall rely on this adaptive process to allow SEZ disturbance as new BMPs are developed and implemented.
- C. The Governors of the States of California and Nevada should request the TRPA Governing Board to expeditiously establish within its ordinances a clear definition, in plain English, setting forth standards as to what constitutes a stream environment zone for the purposes of clearing such areas of hazardous fuels. The standard should be adopted for the purposes of providing a standard that can be uniformly applied by all agencies having environmental regulatory authority in the Basin, eliminating subjective determinations as to such matters, and encouraging the removal of fuels materials from SEZs within populated

areas of the Basin and the surrounding WUI. The definition should define SEZ areas in appropriate gradients of sensitivity to equipment use and should be applied uniformly on a Basin-wide basis. The Commission further recommends the TRPA: (1) update criteria for delineating SEZs on the ground; (2) incorporate the new natural Resources Conservation Service Soil Survey; and (3) clarify secondary criteria for delineating SEZs related to vegetation types, soil characteristics, and floodplain identification. A crosswalk will be developed to reference SEZs to watercourse and lake protection zones (WLPZs) in the California Forest Practice Rules. It is also recommended that the LRWQCB and all other state agencies having jurisdiction over environmental matters within the Basin should be directed by the respective Governors to apply the same uniform definition and standards in determining what constitutes a stream environment zone for their own regulatory purposes within the Tahoe Basin.

- D. In the interim, and not to exceed October 2008, in the event the TRPA does not establish such a uniform definition of SEZ, the Governor of the State of California should direct, within the framework of his authority, all California agencies having jurisdiction over environmental matters within the Tahoe Basin, including the LRWQCB, to apply the provisions of the California Forest Practices Act relating to watercourse protection with regard to SEZs in the Basin. The standard practices prescribed by said Act are understood by potential contractors, and their use will eliminate an impediment to bidders for such fuel reduction projects in the Basin. Further, the Governor should require any deviation from the use of such standard forest practices that results in the imposition of stricter standards to be reported by the agency requiring such deviation with an explanation of the environmental and efficiency tradeoffs considered by such agency when requiring stricter standards to be applied.
- E. The Commission recommends the TRPA and the LRWQCB grant exceptions for disturbance within SEZs for the purposes of completing fuel reduction projects (with equipment) necessary to protect public health and safety as identified in the community wildfire protection plans. The Commission recommends both regulatory boards grant blanket exemptions to a group of fuel reduction prescriptions when the tools or operating procedures described in the Reference Guide (see “B” above) are developed and implemented.

- F. The Commission recommends for fuel treatment projects with potentially significant environmental impacts, all affected regulatory agencies rely on a single or joint environmental analysis and review process (i.e. EIS/EIR) to reach agreement on project specifications, permit conditions, (if applicable), and monitoring.
- G. The Commission recommends raising the minimum diameter limit of live trees requiring a TRPA Tree Removal Permit from 6 inches diameter at breast height (dbh) to 14 inches dbh on all properties throughout the Lake Tahoe Basin.
- H. The Commission recommends allowing winter operations with heavy equipment for fuel reduction over snow or over frozen ground shall be allowed (not in SEZ) through the LRWQCB Waiver Category 1b or 1c Eligibility Criteria.
- I. The Commission recommends the TRPA and the Lahontan Regional Water Quality Control Board make changes to existing waivers, memoranda of understanding, plans and ordinances such that forest treatment projects involving hand crews are no longer required to submit permit or waiver applications under any circumstances. Projects involving hand crews may be included in an annual spreadsheet submitted by April 1st and amended as needed by the project proponent each year to the Multi-Agency Coordination (MAC) Group or the Tahoe Fire and Fuels Team (TFFT) with project identification, project contact, acres to be treated, and location for all proposed hand thinning treatments. Project proponents may amend the spreadsheet as needed. All agencies and interested public shall have access to this information
- J. The Commission recommends the TRPA, the LRWQCB, USDA Forest Service, and other affected agencies amend their plan and ordinances to allow equipment use on slopes greater than 30% based on *current* and *future* technology, and current forest practices to ensure resource protection.
- K. The Commission recommends as part of forest fuel reduction projects in SEZs, regulatory agencies allow spreading of chipped material to acceptable depths where appropriate.
- L. The Commission recommends incorporating “lessons learned” from research and monitoring efforts into future fuel reduction project designs, eliminating the need to continue the same level of monitoring into all projects.

Recommendation 18 *Fire Officials Input to TRPA*

The Governors should direct that all the TRPA ordinances and procedures (whether presently existing or proposed in the future) that affect forest health issues and public safety from catastrophic fire be reviewed in a cooperative manner by the TRPA and qualified professionals with experience in fire prevention and fighting catastrophic fires. The purpose of this review should be to assure that said ordinances and procedures do not pose undue risks of catastrophic fire or create conditions that may increase the risk of such fires to communities within the Basin, or otherwise endanger public safety. Following this review said ordinances and procedures should be amended or modified by the TRPA if necessary to facilitate the mitigation of undue fire hazards.

Recommendation 19 *Basin Chiefs' Recommendations*

That with regard to the issues raised by the Tahoe Basin Fire Chiefs in their letter to the Commission dated September 18, 2007, the Governors of California and Nevada should request the Governing Board of the TRPA to take the following actions no later than June 1, 2008:

- A. Formulate suitable modifications to its ordinances and requirements to permit the widening or enlargement of roadways and driveways in order to improve reasonable emergency access by the fire agencies without requiring property owners to have to provide additional coverage for such public safety improvements.
- B. The Governing Board and the respective fire agencies should complete and have in place amended MOUs regarding the acceptance of up to a 300-foot defensible space zone on sloped properties in the Basin.
- C. The Governing Board should take actions to reconcile all existing BMP requirements with the requirements of California PRC 4291.

Recommendation 20 TRPA Governing Board Changes

The Commission recommends that the Governors of the States of California and Nevada take the following actions in order to bring the perspectives of experienced fire professionals and experts in forest health to the TRPA:

- A. Utilize their respective powers of appointment under the Compact to appoint experienced fire professionals and forest health restoration experts to the TRPA Governing Board, or work with and encourage the other authorities having powers of appointment under the Compact to appoint experienced fire professionals and forest health and restoration experts to the TRPA Governing Board; or
- B. Request the Governing Board of the TRPA to invite qualified fire professionals and forest health/restoration experts to serve as advisors to the Governing Board as ex-officio, non-voting members of the Governing Board.
- C. Request the TRPA Governing Board to immediately appoint additional members to the Advisory Planning Commission (APC), consisting of an experienced fire professional and an experienced forest health/restoration expert from each State, and to direct the APC to monitor and advise the Governing Board on any matters relevant to fire safety issues and forest health and restoration efforts in the Tahoe Basin.
- D. Request the TRPA Governing Board to expand the membership of its Catastrophic Wildfire Prevention Committee to include representation by experienced fire professionals and forest health/restoration experts.
- E. Request the TRPA Governing Board to add experienced fire professional and forest health experts to its staff whose duties would include liaison with the fire fighting authorities within the Basin, assistance in the coordination and implementation of the “10-Year Plan” developed as part of the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*, and assistance with such other forest restoration and fire safety activities and projects as may be appropriate.

Recommendation 21 TRPA Reporting

The Commission recommends that the Governors of the States of California and Nevada request their respective Legislatures to impose duties upon the TRPA to report to the Governors and Legislatures of each State, and to the Congressional delegations of each State, no less than annually regarding:

- A. The status of the implementation of the *Lake Tahoe Basin Multi-Jurisdictional Fire Reduction and Wildfire Prevention Strategy 10-Year Plan*.
- B. The status of fuel reduction efforts and forest restoration efforts within the Tahoe Basin.
- C. The status of remedial vegetation management efforts in areas within the Basin that have suffered catastrophic fires such as the area affected by the 2007 Angora Fire.
- D. The TRPA's compliance with the TRPA's "Regional Plan for the Lake Tahoe Basin: Goals and Policies" insofar as they relate to natural hazards and precautionary measures taken to minimize impacts of fire hazards.
- E. The TRPA's implementation of programs to increase public awareness of fire safety issues, the manipulation of vegetation to reduce fire hazards, and fire prevention techniques.
- F. The TRPA's efforts to cooperate with the USDA Forest Service and other public land managers, private landowners, and local fire departments and fire protection districts to accomplish fire hazard reduction projects.
- G. The TRPA's compliance, or failure to comply, with any fire prevention or public safety recommendations made by such fire departments and fire protection districts.

Recommendation 22 TRPA Oversight

The Commission recommends that until the Legislatures of the States of California and Nevada collectively adopt legislation imposing the duties on the TRPA described in the preceding Recommendation, the Governors of the States of California and Nevada continue the duties and responsibilities of the California-Nevada Tahoe Basin Fire Commission for the purpose of providing such oversight, and request the TRPA Governing Board to voluntarily undertake such reporting duties to provide to the Governors and their designated representatives with the information identified in the preceding recommendation.

Recommendation 23 *TRPA Budget Changes*

The Commission recommends that the Governors of the States of California and Nevada request their respective State Legislatures to utilize their budget review processes of the respective States relating to the TRPA to exercise active and aggressive oversight of the TRPA's activities with regard to the implementation of the recommendations of the California-Nevada Tahoe Basin Fire Commission, fuel reductions programs within the Tahoe Basin, forest health and restoration efforts within the Basin, and fire safety recommendations made by the fire departments and fire protection districts located within the Basin.

Recommendation 24 *USFS/TRPA MOU*

The Commission recommends that the USDA Forest Service and the Tahoe Regional Planning Agency work cooperatively to revise their MOU with focus on exempting fuel reduction projects and associated supporting activities from the TRPA review and permit.

Recommendation 25 *USFS/LRWQCB MOU*

The Commission recommends that the USDA Forest Service and the LRWQCB review their MOU and revise any stipulations that impede project planning and implementation related to fuels projects and associated supporting activities.

Recommendation 26 *TRPA/LRWQCB MOU*

It is recommended that the Governor of the State of California direct, within the framework of his legal authority, the Lahontan Regional Water Quality Control Board (LRWQCB) to transfer to the TRPA no later than October 1, 2008, by a suitable MOU, all responsibility of the LRWQCB relating to fuel reduction projects performed within the Tahoe Basin. The intent is to have an expedited single permitting process, eliminating the need for the LRWQCB to issue a second permit, and to achieve consistency in the application of environmental laws as relates to these kinds of projects in the Tahoe Basin. In addition, pursue the execution of a Management Agency Agreement (MAA) between the State Water Resources Control Board (SWRCB) and the TRPA in accordance with SWRCB existing policy for non-point discharge. Consideration of an MAA while not expected for several months is not intended to be, nor shall it be considered a basis for, delay in execution of the MOU between the LRWQCB and the Tahoe Regional Planning Agency.

Recommendation 27 *TRPA Comment on LRWQCB Policies*

It is recommended that the Governor of the State of California, within the framework of his legal authority, direct the LRWQCB to request comments from the TRPA Governing Board prior to enacting any new regulations and/or revised interpretations of existing regulations relating to or otherwise affecting removal or mitigation of fire hazards.

Recommendation 28 *TRPA Decision Appeals*

It is recommended that the Governing Board of the TRPA adopt suitable procedures allowing interested persons affected by approvals or denials of fuel reduction projects that are subject to the TRPA's revised MOU with the LRWQCB with regard to such matters to appeal such decisions to the TRPA Governing Board provided that good cause is shown for such appeals, that such reviews are conducted in open meetings, and such reviews are conducted in an expeditious manner that does not unreasonably delay the implementation of the subject fuel reduction project.

Recommendation 29 *CAL FIRE Monitor TRPA/LRWQCB MOU*

It is recommended that the Director of CAL FIRE be empowered by the Governor of the state of California to monitor, and report to the Governor the progress on, the development of the MOU between the LRWQCB and the TRPA with regard to reduction of fire hazards. It is further recommended that the final MOU be submitted to, and be subject to the prior review and comment by the Director of CAL FIRE.

Recommendation 30 *Fire Chiefs Monitor Permit Streamlining*

The agencies represented on the permit streamlining group have submitted a substantial list of planned actions to the Commission. The implementation of these actions is urgent, their details need direction from fire professionals, and an important goal is to achieve Basin-wide permitting consistency for fuel reduction projects. It is therefore recommended that the Governors of Nevada and California appoint their respective State Directors of fire fighting activities (the Nevada State Forester/Fire Warden, and Chief, CAL FIRE, respectively) to monitor the implementation, and report to the Governors, the progress of permit streamlining actions.

Recommendation 31 *Quantitative Standards for Soil Productivity*

It is recommended that quantitative standards for soil productivity and hydrologic function as developed by the U.S. Forest Service Pacific Southwest Region be utilized throughout the Lake Tahoe Basin, and that Region 5 of the U.S. Forest Service, with guidance from the Pacific Southwest Research Station, develop implementation and effectiveness monitoring protocols to ensure that the quantitative standards for soil productivity and hydrologic function are met.

Recommendation 32 *No LRWCQB Permit for Home Construction*

The Commission recommends that the Lahontan Regional Water Quality Control Board Executive Officer issue a letter clarifying that its existing MOU with the TRPA for residential construction constitutes a waiver of waste discharge requirements for new residential construction, including tree and vegetation removal, therefore eliminating the need for a permit from the Lahontan Regional Water Quality Control Board.

Recommendation 33 *Changes to CA Forest Practice Act*

The Commission recommends that the California Legislature take action to amend PRC 4527 Timber Operations or/and PRC 4526 Timberland, so as to eliminate the need for CAL FIRE to require a notice of exemption within the Lake Tahoe Basin to remove trees for new construction on non-Federal parcels less than 3 acres in size (14 CCR 1104.1), and instead defer to the TRPA ordinance.

Recommendation 34 *No LRWQCB Fee for Urban Lots*

The Commission recommends that the Lahontan Regional Water Quality Control Board expand Category 1A of its timber waiver to include urban lots, including lots containing SEZs, managed by Federal, California State or local governments within the Lake Tahoe Basin. This will eliminate the need for these land management agencies to notify or pay a fee to the LRWQCB to reduce fuel loads on such lots.

Recommendation 35 *Expansion of TRPA MOU*

The Commission recommends that the TRPA expand or adopt MOU's with public land management agencies to exempt tree and vegetation removal from publicly managed urban lots.

Recommendation 36 *No Need for Exemption*

The Commission recommends that the California legislature take actions, relative to the Lake Tahoe Basin, such as amending Public Resources Code (PRC) 4527 Timber operations or/and or California PRC 4526 Timberland, so as to no longer require projects on parcels less than 3 acres in size that would require a Notice of Exemption for Harvesting Christmas Trees, (14 CCR 1038 (a)), Less than 10% Average Volume of Dead Dying or Diseased Trees (14 CCR 1038 (b)), compliance with PRC 4290 and 4291 (14 CCR 1038 (c)) and the Tahoe Exemption (14 CCR 1038 (f)) from Forest Practice Act filing requirements within the Lake Tahoe Basin, and instead refer to the TRPA ordinance.



View towards Cave Rock, circa 1890



Recent photo, same view and camera position

US Forest Service



During the Angora Fire, surface fire encroached on homes without defensible space

CATEGORY 3: COMMUNITY AND HOMEOWNER FIRE PREVENTION

Recommendation 37 *Defensible Space Guidelines*

The Governors should direct regulatory and implementing agencies in the Lake Tahoe Basin to come to agreement on a single, clear and consistent set of guidelines and practices to make it easier for property owners to attain defensible space around their properties without violating erosion control “best management practices” (BMPs). These should include:

- A. All practices must be in compliance with California PRC 4291, and with the principles described in the most recent revision of the "Living With Fire – Lake Tahoe Basin Recommendations".
- B. All regulatory authorities having jurisdiction within the Lake Tahoe Basin shall adopt the following defensible space standard for the area within 5 to 30 feet of any structure:

1. During fire season, the area that is 5 to 30 feet from any structure shall entirely or predominately consist of noncombustible materials. Noncombustible materials include the following:
 - a. Stabilized bare ground and mineral soil.
 - b. Gravel, rock, asphalt, concrete, etc.
 - c. Healthy, well maintained, actively growing, high moisture content herbaceous plants, such as bunchgrasses, clover, succulents, flowers (i.e. forbs), and turfgrass.
2. Specimen plants or limited areas of combustible materials included within a landscaping plan may be acceptable within this 5 to 30 foot zone, provided they do not provide a means of rapidly transmitting fire across this area from the wildlands to the structure or vice-versa.
3. Fallen pine needles shall be removed from areas within this 5 to 30 foot zone prior to fire season each year and shall not be allowed to accumulate in any manner that

creates a fire hazard.

Wood mulch shall not be used in a widespread manner within this zone due to its combustible nature and the inability to maintain this material free of excessive pine needle accumulation. (NOTE: It is assumed that pine needles will accumulate seasonally and be left for the winter to stabilize the ground, and be removed each spring for defensible space purposes.)



Christy Daugherty

Treated California Tahoe Conservancy (CTC) lot; Angora Fire spread as a surface fire here even though the houses across the street burned to the ground

4. No permit shall be required for removal of trees less than 14 inches in diameter at breast height.
5. Trees greater than 14 inches in diameter at breast height that are deemed a fire hazard by trained fire officials working under an MOU with the TRPA may be removed with the fire official's approval and mark.

Recommendation 38 ***“Living With Fire” Educational Program***

The Governors should support and enhance the existing fire prevention education program, “Living With Fire,” which is coordinated by the University of Nevada Cooperative Extension. This comprehensive wildfire protection education framework must be provided with permanent and stable funding sources for continued program services. (<http://www.livingwithfire.info/>)

Recommendation 39 ***Homeowner Education***

Education, inspections and enforcement of defensible space measures must emphasize the importance of removing hazardous vegetative fuels on the property and actively educate the homeowner about building envelope ignition resistance. Homeowners must address both defensible space and building ignition resistance.

Recommendation 40 ***Defensible Space Performance Standards***

The non-federal fire agencies and districts within the Lake Tahoe Basin should develop performance standards for initial and follow-up (enforcement) inspections relating to defensible space and other fire safety programs in order to improve the provision of such services and the effectiveness of such programs.

Recommendation 41 ***Single Point of Contact for Information***

The Commission recommends that a single point of contact, such as a “1-800-number,” be developed for property owners to call for information on defensible space guidelines and permit requirements. This should be a collaborative effort between the Tahoe Regional Planning Agency (TRPA), the Nevada Fire Safe Council, the University of Nevada Cooperative Extension, and the Tahoe Basin fire agencies.

Recommendation 42 ***Tree Marking Program***

The Commission recommends that CAL FIRE, Nevada Division of Forestry (NDF), the TRPA, and the Tahoe Basin fire agencies work together to create a defensible space based tree marking program for non-federal lands, and that CAL FIRE and NDF include this program in their annual PRC 4291 training to all non-federal fire agencies in the Tahoe Basin to ensure that tree marking for defensible space purposes is conducted consistently throughout the Basin.

Recommendation 43 *Change in Foresters (RPF) Law*

The Commission recommends the following changes to California Public Resources Code (PRC) regarding the role of Registered Professional Foresters in the implementation of defensible space measures:

- A. Amend PRC 757 to provide an exemption from requiring a Registered Professional Forester for local government or fire protection agencies who give advice to landowners for the purposes of complying with PRC 4291.
- B. Amend PRC 4527 Timber Operations or/and PRC 4526 Timberland, so as to eliminate the need for CAL FIRE to require a Notice of Exemption to remove trees for commercial purposes when removing trees in order to comply with California PRC 4291 within the Lake Tahoe Basin.

Recommendation 44 *Enforcement of Defensible Space*

The Commission recommends vigorous enforcement of defensible space provisions, and the imposition of consequences for noncompliance, which may include fines provided for under PRC 4291, additional fines imposed by the TRPA, and/or billing a homeowner (or placing a lien on properties until the bill is paid) after some number of notices of violations have been ignored.

Recommendation 45 *Fire Resistant Building Materials*

The Commission recommends a Basin-wide effort to encourage the use of fire resistant building materials, including the following elements:

- A. The TRPA should consult with appropriate Nevada counties to evaluate if Chapter 7A standards of the California Building Code can be adopted so that a consistent level of structure ignition protection is provided throughout the Lake Tahoe Basin.
- B. State and local fire marshals should communicate building code process and technical changes to the TRPA no less frequently than yearly.
- C. CAL FIRE should conduct annual workshops to demonstrate new advances in ember resistant devices for home retrofit applications, including devices to retrofit roofs, attics vents, crawl space vents, decks and windows.

Recommendation 46 *Fire Safe Building Ordinances*

The Commission recommends that all local governmental authorities in the Tahoe Basin having jurisdiction and control over buildings and structures, including the various fire agencies located within the Tahoe Basin, adopt suitable ordinances requiring the retrofitting of existing structures within the Tahoe Basin to meet modern fire standards suitable for use in wildland urban interface areas. In particular, it is recommended that all buildings presently existing in the Tahoe Basin that have wood shake or shingle roofs be required to replace existing roofs with roofing materials that are ignition resistant and suitable for use within wildland urban interface areas.



US Forest Service

Trees survived surface fire, house destroyed in Angora Fire

Recommendation 47 *Grants*

The Commission recommends that the local governments, with the assistance of the Tahoe Basin Fire Chiefs and any Basin-wide Fire Safe Council or other organization formed to address fire safety matters in the Basin, pursue any grant or loan programs that may be available to assist property owners in retrofitting their residences to meet these requirements.

Recommendation 48 *Staffing for Fire Prevention*

The Commission recommends a minimum of two CAL FIRE fire prevention positions should be permanently stationed in the Basin.

Recommendation 49 *Study of Existing Fire Code*

The Commission recommends that a Basin-wide deficiency study and needs assessment based on existing conditions and current fire codes should be completed to make recommendations in determining the cost associated with replacing and updating undersized water distribution infrastructure. This study and assessment should be completed by the utility district and private water purveyors throughout the Lake Tahoe Basin. An annexation study of private water systems into public utility districts must be evaluated and considered. Based on the assessment, the utility district should pursue loans, grants and rate increases as necessary and appropriate.

CATEGORY 4: FOREST AND FUELS MANAGEMENT

Recommendation 50 *USFS Timber Salvage*

The Governors should request the USDA Forest Service and all other landowners within the Angora Fire burn area to immediately undertake steps to facilitate the removal from the area of burned trees that are salvageable for commercial purposes. Steps should include:

- A. Allow commercial logging contractors reasonable access to the area to undertake such removal.
- B. Request and/or direct the TRPA, the Lahontan Regional Water Quality Control Board, and other State agencies having jurisdiction in the Angora Fire area, to expedite the permitting process to allow such tree removals including, if necessary, the waiver of any regulatory requirements that may impede such timber removal.
- C. Request the TRPA and the USDA Forest Service to adopt and implement a forest restoration plan for the Angora burn zone that will serve as a model for the rest of the nation and that will restore this important part of the Tahoe Basin in a manner that will benefit the Lake over the long term.
- D. Give first priority for clearance of burned trees and forest restoration efforts in the Angora burn area (in both terms of timing and funding) to areas within the wildland urban interface area, the area within ¼ mile of any dwellings within the burned area.
- E. These steps should be adopted by the States of California and Nevada and the U.S. Forest Service, as the standard procedure to be followed in any future areas of the Lake Tahoe Basin that are subject to catastrophic fire.



Angora salvage operation on private parcels



Loading salvage after the fire

Christy Daugherty

Recommendation 51 *Promote USFS Fuels Treatment Projects*

The Governors should support fuels treatment prescriptions that proved effective in the Angora Fire on USDA Forest Service urban intermix parcels and encourage their continued use. In addition, the Governors should request:

- A. USDA Forest Service to consider more intensive treatments on steeper slopes where only pre-commercial thinning treatments are now occurring.
- B. USDA Forest Service to continue implementing the current plan to have all 3,200 urban intermix parcels treated by 2010.
- C. USDA Forest Service to continue to implement the plan for maintenance of fuels treatments on urban intermix parcels, including utilization of stewardship agreements with local fire districts and stewardship permits for local land owners.
- D. Review of current regulatory constraints that impede such treatments.

Recommendation 52 *“Priority One” for TRPA*

The Commission recommends that the TRPA continue to make the avoidance of catastrophic fire its number one priority. The TRPA should be aggressive in facilitating, approving, and permitting projects by the Tahoe Basin’s land managers and property owners to remove fuels from the forests and to implement forest restoration plans for the purpose of creating more fire-resilient forests within the Basin.

Recommendation 53 *Aggressive TRPA Vegetation Treatments*

Article V, Section (c)(3) of the *Compact* requires the TRPA to adopt a conservation plan for the preservation, development, utilization, and management of the scenic and other natural resources within the Tahoe Basin. The TRPA reports that it has adopted such a plan. The TRPA Governing Board should take aggressive steps to facilitate cost effective vegetation treatments and fuel removal projects including, where necessary and appropriate, access roads and other means of access, in order to complete such projects and to provide emergency access by the fire agencies.

Recommendation 54 10-Year Plan and Interagency Coordination

The *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* and its annual updating process should be used as the mechanism to achieve interagency coordination, increased economic and operational efficiency, and public awareness of fuel treatment priorities within the Basin for the next ten years.

Recommendation 55 Fuels Treatment Projects Collaboration

The 17 agencies covered by the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* should annually develop one or more fuel treatment projects that integrate fuels treatment across jurisdictional boundaries with one decision document, combined funding, and one implementation contract to the extent feasible under their legal authorities. This recommendation should be applied to Round 9 and all subsequent Southern Nevada Public Lands Management Act (SNPLMA) funding cycles.

Recommendation 56 Forest Thinning and Biomass Use

The Governors should encourage forest thinning and woody biomass-to-energy processing in the Tahoe Basin as essential components of restoring healthy forest conditions, reducing the severity and intensity of future wildfires, lowering air and water pollution, and reducing local production of greenhouse gases. Specific actions should include:

- A. Provide financial and operational support to projects and programs that maximize efforts that promote biomass conversion to green energy as practical



Forest thinning with chipper

US Forest Service

within and near the Tahoe Basin. This financial support could come from a combination of Production Tax Credits (similar to solar and wind), Feed-In Tariffs, future Carbon Credits and focused state grants and agency funding where feasible.

- B. Where feasible and subject to an economic and ecological analysis demonstrating that processing facility investment in or near the biomass materials source is superior to hauling biomass materials to an existing processing facility, provide funding to accelerate viable coordinated stand-alone biomass to energy facility (or capability) at each end of the Tahoe Basin (due to economics and logistical issues of road use and forest access) to make the disposal of annual forest material a preferred option. Funding should be complementary to any private funding to develop a public/private partnership and could come from focused state grants and agency funding where feasible.
- C. Direct regulatory agencies within the Tahoe Basin to establish consistency in the application of emissions thresholds for permitting process of facilities.
- D. Direct state agencies and encourage all agencies to streamline access to biomass materials, including ensuring access through and within SEZs and use of temporary roading.
- E. Direct state agencies and encourage all agencies to facilitate the use of state lands for biomass harvesting activities, and advocate the availability of federal lands for this purpose.
- F. Advise the use of existing federal and state contracting tools to enter into long term (minimum 10-year) agreements for the supply of biomass materials to qualified utilization organizations. If necessary, the contracts would contain financial incentives to pay unrecoverable costs.
- G. Allow the most cost effective and ecologically sound treatments on the landscape. The purpose of this recommendation is to reduce the cost per acre of treatment of the forested lands and cost per bone dry ton of the biomass to allow for a more economic basis to ensure utilization rather than disposal of biomass.
- H. By gubernatorial and congressional action establish a goal that will maximize biomass potential for forest treatment under all annual planning mechanisms. The goal should provide assurance that a long-term supply (minimum ten years) is available to attract private

investment in biomass facilities. A higher goal, if possible, is preferred in order to minimize the air quality and other negative impacts of pile burning.

- I. Request that both Governors advocate removing legislative barriers to utilization of woody biomass from public lands and both Governors advocate federal tax credit parity for all forms of renewable energy under the Federal Energy Policy Act.

Recommendation 57 *Firewood for Recreation*

Where biomass-to-energy processing is not practical, excess forest fuels that must be removed to achieve forest health and fire protection purposes should be utilized for firewood and recreational experiences, especially in campgrounds and recreational areas, while people selling firewood should be encouraged to use vendors that acquire their wood from the Tahoe Basin.

Recommendation 58 *Prescribed Fire and Forest Thinning*

Prescribed fire and thinning should be promoted as an effective means of managing for a fire-resilient forest. More intensive treatments should be considered for treating fuels on steeper slopes, and current regulatory constraints should be reviewed to ensure implementation of this recommendation

Recommendation 59 *Prescribed Fire Educational Material*

Practitioners of prescribed fire should develop educational materials outlining the benefits of prescribed fire and fuel treatments to better inform regulators and the public.

Recommendation 60 *Technology to Increase Burn Days*

In order to optimize burn windows for prescribed fire activities within the Lake Tahoe Basin while minimizing negative air quality impacts, a more comprehensive air quality and meteorological information should be implemented. Among the technologies that should be implemented or further analyzed for implementation in the Basin are: real time smoke/PM2.5 monitoring, use of web Cams, smoke modeling, the Prescribed Fire Information Reporting System (PFIRS), meteorological tools, and a common website for dissemination of information.

Recommendation 61 CARB Burn Day Test Program

The California Air Resources Board (CARB) will develop and implement a test program, by March 1, 2008, to evaluate alternate burn day criteria, to see if additional burn days can be added in the Lake Tahoe Air Basin without adverse effects on the region's air quality. A subgroup of the Lake Tahoe Area Air Quality Working Group will work with CARB to assist in identifying and/or developing the test criteria.

Recommendation 62 Burn Day Status – "Information Only"

The California Air Resources Board will conduct a feasibility study as part of their test program to allow implementing agencies in the Lake Tahoe Basin to consider the daily burn day status as "information only", and to also use other available information on conditions to decide when to burn, consistent with air quality objectives, which has proven successful on the Nevada side of the Basin. If the CARB finds this approach to be feasible, a change in CARB regulations may be required.



US Forest Service

Pile burning for fuel reduction during the winter

Recommendation 63 Smoke Management Education

A sub-committee of the Lake Tahoe Area Air Quality Working Group should develop suitable public information products (accounting for different values, expectations, and level of local knowledge between visitors and residents) to be used by all land managers and air quality agencies in the Basin to educate the public on fuels treatment, prescribed burning, smoke management, and public health.

Recommendation 64 *Open Burning Alternative*

Where practical, air curtain burners should be used as an alternative to open pile burning as one of the options for disposal of thinned forest fuels.

Recommendation 65 *Improve Opportunity for Burning*

The California Air Resources Board and local Air Pollution Control Districts should consider permitting more prescribed burning ahead of good dispersal conditions by declaring and permitting more “marginal burn days with improving conditions” the day before the arrival of a weather system.

Recommendation 66 *Status Quo for Nevada*

The air quality agencies and land managers in Nevada should continue to follow the same prescribed burning practices that are currently in place; and in the application of their Smoke Management Programs should consider all available sources of information in order to make better-informed decisions. The Washoe County Air Quality Management District and Nevada Division of Environmental Protection should continue to participate in Basin-wide efforts to better understand air quality and meteorological conditions, which will lead to the development of more useful technology to assist prescribed fire decision makers.

Recommendation 67 *Policies to Improve Road Access*

The Governors should direct the TRPA, the Lahontan Regional Water Quality Control Board, and other Lake Tahoe Basin regulatory agencies to review and revise current policies, as appropriate, to fully implement the use of temporary access roads and mechanized equipment to expedite forest health and fuel reduction projects for the purpose of reducing the risk of catastrophic wildfire.

In an effort to minimize soil erosion and potential impacts to water quality, a project specific plan shall be developed to include the design, construction, operation and ultimate reclamation of temporary access roads. Appropriate best management practices, (BMPs), shall be included in the project plan consistent with Nevada and California Forest Practices Acts, revised statutes, TRPA Codes, and applicable federal land management guidance documents.

Recommendation 68 *Mechanized Equipment in SEZs*

The Commission recommends that the Governors of the States of Nevada and California direct the TRPA to take the action necessary to allow the use of mechanized equipment to remove fuels in stream environment zones (SEZs), which should include, if necessary, revising their Lake Tahoe 208 Water Quality Plan’s section for mechanical work within SEZs.



US Forest Service

Whole tree harvester clearing hazardous fuels

Recommendation 69 *Prioritize Fire Hazard Reduction*

Until the risk of catastrophic fire is significantly reduced or eliminated in the Tahoe Basin, the Governors should direct their respective state agencies having jurisdiction in the Basin to consider fire hazard reduction an overriding priority when considering applications for use of mechanized equipment for hazardous fuel reduction projects.

Recommendation 70 *More Work in SEZs*

The Commission recommends that the Lahontan Regional Water Quality Control Board change the interpretation of their regulations to allow pile burning and the spreading of chipped material in SEZs.

Recommendation 71 *Forestry Handbook*

The Commission recommends land managers and regulatory personnel develop a *Handbook of Forestry Practices for the Lake Tahoe Basin*. This effort shall be based on finding common solutions through a collaborative process, using a science-based approach, following adaptive management, and using a broad range of field plots and direct measurements to test specific hypotheses.

Recommendation 72 *Simplify Monitoring*

The Governors should direct regulatory and implementing agencies in the Lake Tahoe Basin to simplify the existing system for monitoring the impacts of fuel reduction projects. Steps that should be taken to reduce or eliminate complexity, confusion, and redundancy include:

- A. Agencies involved in permitting fire risk reduction projects for non-federal entities (state agencies, local fire districts, and fire safe councils) shall assume responsibility for *effectiveness* and *validation* monitoring permit requirements.
- B. Agencies involved in implementing shall be responsible for *implementation* monitoring.
- C. Agencies involved in permitting shall assist non-federal entities in developing the organizational capacity to carry out permit requirements for performance of implementation monitoring.

Recommendation 73 *No Need for RPFs on Urban Lots*

To ensure compliance with California Public Resources Code and the Professional Foresters Law, the Commission recommends that the TRPA identify the privately owned “small undeveloped urban lots devoted to urban uses” in the California portion of the Lake Tahoe Basin as those lots that are 1) undeveloped, 2) within a community, and 3) do not constitute a “forested landscape”.

CATEGORY 5: FIRE SUPPRESSION

Recommendation 74 *Life, Property, and the Environment*

The Governors of California and Nevada should adopt the priorities of life, property, and the environment, in that order, with respect to fire safety, fire prevention, and related matters within the Lake Tahoe Basin.

Recommendation 75 *24/7 Fire Protection*

The State of California should review the level of fire protection service provided to California “state responsibility areas” in the Tahoe Basin to determine if adjustments need to be made to achieve a level of protection that is comparable to similar lands elsewhere in the state.

If it is determined that adjustments need to be made, consideration should be given to placing fire engines on the north and south ends of Lake Tahoe 24/7 during declared fire season, and instructing those engine companies (and potential forester positions) to participate in California PRC 4291 inspections in cooperation with local government agencies.

Recommendation 76 *CAL FIRE Presence*

The State of California should study the feasibility of locating a new CAL FIRE station on State Park property or on alternative properties in the Lake Tahoe Basin. If warranted by the feasibility study, the state should provide funding for the construction of a new CAL FIRE station in the Basin.

Recommendation 77 *Co-locate USFS/FPD Engines*

The Governors should request that the U.S. Forest Service Lake Tahoe Basin Management Unit explore opportunities regarding the joint location of the Fire Protection District and Forest Service engines to improve wildland fire response times on the north shore areas of the Lake Tahoe Basin.



Tahoe Regional Planning Agency

Fighting fire in the Tahoe Basin

Recommendation 78 *MAFFS Fire Fighting Air Support*

The Governors should support equipping the C-130s of the Nevada Air National Guard with the Modular Airborne Fire Fighting System and appropriate equipment.

Recommendation 79 *Use of Closest Forces*

In an effort to improve the initial attack of wildfires in the Lake Tahoe Basin, the Governors should direct that a permanent interagency (federal, state & local) resolution be developed and implemented prior to the 2008 wildfire season that ensures that all available wildfire suppression resources are identified and deployed to reported wildfires in the Lake Tahoe Basin based on the “closest forces” doctrine.

Recommendation 80 *Single Dispatching Center*

To avoid continued confusion regarding interagency communications during wildland fire occurrences, all dispatch centers and responding resources in the Tahoe Basin will adhere to the existing agreements, including:

- Immediately notifying the Camino Interagency Dispatch Center of a wildland fire call/dispatch.
- Camino will serve as the single (and only) point of ordering resources for the wildland fire response.
- The local “White” fire radio frequency will be used for all multi-agency wildland fire response.

Recommendation 81 *Fire Fighting Resource Coordination*

Through the process of the development of an Annual Operating Plan, all cooperating agencies and fire protection districts/departments will continue to develop and utilize agreements for keeping status of firefighting resources moving into or through different dispatch areas for the purposes of notification of location and availability for response to an incident.

CATEGORY 6: FUNDING



“Cut to length” operation for fuel reduction



Forest fuels ready for removal

Recommendation 82 *Annual Funding for Forest Health*

It is recommended the Governors of the States of Nevada and California work with their respective Congressional delegations to establish an annual sustainable fund for forest health for the Lake Tahoe Basin. A potential funding source is through the Southern Nevada Public Lands Management Act (SNPLMA).



California Conservation Corps crews chipping brush

Christy Daugherty

Recommendation 83 *Appropriation of Emergency Funds*

The Commission recommends to the Governors of the States of Nevada and California that they join with congressional representatives and the Executive Branch to amend the Lake Tahoe Restoration Act to provide a line item annual funding source appropriation for emergency fuel reduction/forest restoration efforts in the Lake Tahoe Basin. The funding request should be, at a minimum, the amount required to implement the federal share, including work on federal lands, and grants to states and local agencies with appropriate cost share provisions, of the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*. These funds will be supplemented by state and local and private sector shares of funds to implement the entire “10-Year Plan”. The funding needs as set forth in the “10-Year Plan” are recommended as being correct for the projects identified therein, and are set forth in the “Estimated Hazardous Fuels Reduction Costs for the Lake Tahoe Basin”.

Recommendation 84 *Five Year Funding*

There is an immediate pressing need for fuel reduction on state, municipal and private properties totaling over 15,000 acres adjacent to the communities located within the Lake Tahoe Basin as set forth in the 10-Year Plan. Defensible space needs to be created on a substantial number of the approximately 40,000 privately owned parcels within the Basin, and there is a need to dispose of the woody debris that will result from forest fuel reduction and defensible space projects. In order to complete this emergency level of fire and fuel reduction work, it is recommended that the following funding will be necessary over the next 5 years and must be provided by state and/or local sources including private owners, if not otherwise available from FEMA or other government sources. The funding proposed in this recommendation is intended to be additional and not re-directed from current allocated funds in to the Tahoe Basin. However, the Commission recognizes that it may be necessary to expand existing priorities in order to accommodate the emergency need of reducing the risk of catastrophic fire.

Create fuel break parcel & projects database	\$ 500,000 (one time funds)
Create a defensible space risk database	\$ 500,000 (one time funds)
Subtotal, one time funding required	\$1,000,000
Additional fuel reduction project staff	\$450,000 / year
Additional science for sensitive lands treatments	\$150,000 / year
Fuel reduction on State, local, private lands	\$5,000,000 / year
Total State, municipal, private forestry¹	\$5,600,000 / year
Additional defensible space inspections	\$300,000 / year
Defensible space project coordination	\$350,000 / year
Add'l fuels and D-Space database maintenance	\$282,000 / year
Add'l homeowner education campaign	\$250,000 / year
Total Defensible Space Support^{1, 2}	\$1,182,000 / year

¹ Described within “10-Year Plan” Fuel reduction Strategy. It is noted by the Commission that the “10-Year Plan” for fuel reduction projects in the Lake Tahoe Basin is a strategic document and that fuels project locations, treatment prescriptions, and implementation methods may change as tactical plans are developed. Therefore, the Commission’s funding estimates do not purport to address funding needs of all worthwhile fuels projects in the Basin, and additional funding for such projects should be anticipated as such strategies are developed.

² The above staffing funding will implement establishing defensible space on approximately 8,000 privately owned urban parcels per year. This program, representing an additional 6500 defensible space inspections yearly, will require estimated aggregate expenditures of approximately \$12 million per year by the owners of the privately owned parcels.

Recommendation 85 *Establish JPA for Funding*

It is recommended that the Lake Tahoe Basin Fire Chiefs form a Joint Powers Authority to coordinate the stop gap funding provided by the State of California and the State of Nevada, and to coordinate long term maintenance of fuel reduction project areas and community defensible space.

Recommendation 86 *TRPA Database Management*

It is recommended that the TRPA manage the database and GIS components of the fire management system and that the non-federal Lake Tahoe fire agencies would perform management oversight of this work through the Joint Powers Authority.

Recommendation 87 *Parcel Fee for Long Term Funding*

It is recommended that the Lake Tahoe Fire Chiefs find more stable, long-term funding to replace the stop gap funding provided by the States, likely through the collection of a parcel fee or similar special assessments on property owners.

Recommendation 88 *Legislate Special Assessment Districts*

The Commission recommends that the States of Nevada and California review their statutes to assure that adequate statutory authority exists to permit the imposition of such special assessment districts for the collection of funds for fire safety and fire prevention and, if necessary, adopt such legislation as may be reasonably necessary to authorize such local funding mechanisms in the Tahoe Basin. If such authority exists, all local governmental entities within the Tahoe Basin, including all of the counties and city governments in the Basin, should consider the implementation of special assessment districts or similar funding mechanisms, for the collection of funds for fire safety and fire prevention activities in the wildland urban interface (WUI) areas within and surrounding the communities in the Tahoe Basin.

Recommendation 89 *Fuels Treatment Prioritization*

The Commission recommends that all permitting agencies within the Tahoe Basin, all entities providing funding for fuel treatment projects within the Basin, and all land managers within the Tahoe Basin should assign, as their respective first priority for action, fuel treatment projects most likely to protect life, property, and the environment in that order. To the extent this may require regulatory procedures to be expedited, they should be to the maximum extent possible.

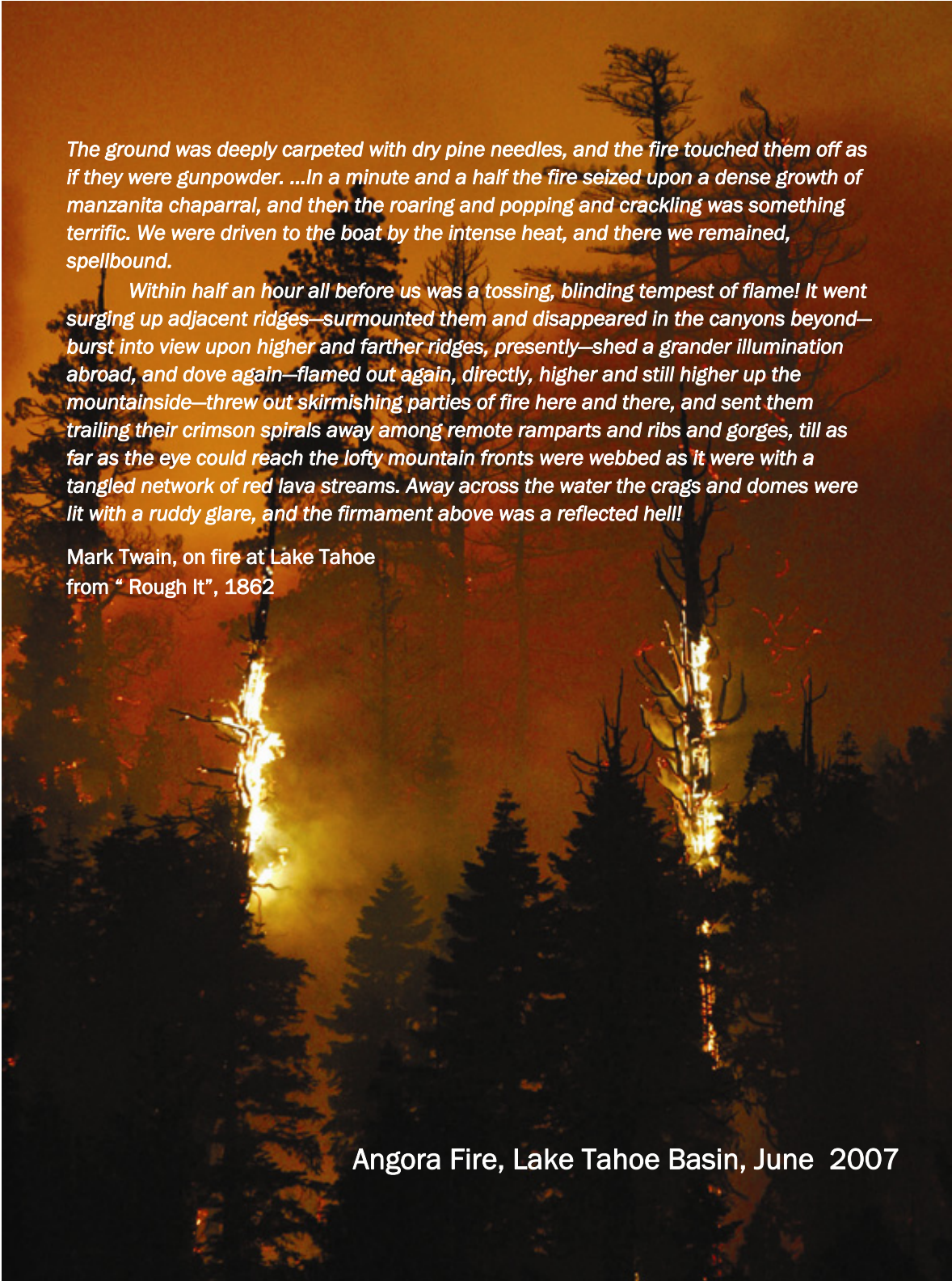
Recommendation 90 *TRPA's Budget*

The Commission recommends that the Governors of the States of California and Nevada request the TRPA to submit a supplemental budget request to the two States addressing the additional costs, if any, anticipated to be incurred by the TRPA in meeting any additional duties imposed upon it by the two States pursuant to the Commission's recommendations, and that the Governors request the Legislatures of their respective States to fund reasonable supplemental budget requests for such purposes.



Christy Daugherty

Emerald Bay, Lake Tahoe



The ground was deeply carpeted with dry pine needles, and the fire touched them off as if they were gunpowder. ...In a minute and a half the fire seized upon a dense growth of manzanita chaparral, and then the roaring and popping and crackling was something terrific. We were driven to the boat by the intense heat, and there we remained, spellbound.

Within half an hour all before us was a tossing, blinding tempest of flame! It went surging up adjacent ridges—surmounted them and disappeared in the canyons beyond—burst into view upon higher and farther ridges, presently—shed a grander illumination abroad, and dove again—flamed out again, directly, higher and still higher up the mountainside—threw out skirmishing parties of fire here and there, and sent them trailing their crimson spirals away among remote ramparts and ribs and gorges, till as far as the eye could reach the lofty mountain fronts were webbed as it were with a tangled network of red lava streams. Away across the water the crags and domes were lit with a ruddy glare, and the firmament above was a reflected hell!

Mark Twain, on fire at Lake Tahoe
from “Rough It”, 1862

Angora Fire, Lake Tahoe Basin, June 2007

Appendix A

Governor Arnold Schwarzenegger's Press Release Announcing Commission

Gov. Schwarzenegger Announces California-Nevada Tahoe Basin Fire Commission to Assess Fire Prevention Laws

Visiting the Lake Tahoe area a third time since the Angora Fire began, Governor Schwarzenegger today joined with Governor Jim Gibbons of Nevada to announce the California-Nevada Tahoe Basin Fire Commission. The two governors signed a Memorandum of Understanding to create a panel of 17 voting members that represent each State's stake in the responsible management of lands and fire fuels within the Tahoe Basin, including representatives from affected state agencies, fire agencies and the public. They also requested the Secretary of the U.S. Department of Agriculture to designate one person from the United States Forest Service to serve on the commission.

The Commission will perform a comprehensive review of the laws, policies and practices that affect the vulnerability of the Tahoe Basin to wildfires. It will also study and consider various user-friendly approaches to reducing the threat of wildfires while protecting the environment and submit a report and recommendations to the two governors by March 21, 2008.

"It is crucial that we all work together to prevent something like the Angora Fire from happening again and also make sure people have the right fire protection tools to protect their property," said Governor Schwarzenegger. "With this action we are taking today I know California and Nevada will rise to the occasion and make sure the Lake Tahoe Basin remains as safe as it is beautiful."

The Commission will disband 60 days after delivering its report and recommendations.

To help the victims recover, Governor Schwarzenegger has been engaged in the response efforts since the Angora Fire began on June 24, 2007.

On July 4, 2007, Governor Schwarzenegger sent a letter to the U.S. Small Business Administration (SBA) requesting that El Dorado County be declared a disaster area in order to provide SBA Disaster Loan Program assistance to Angora Fire victims. The request was granted and will qualify victims of the Angora

Fire for low income loans of up to \$200,000 for homeowners to repair or replace their damaged or destroyed primary residence. Also, homeowners and renters are eligible for up to \$40,000 to repair or replace damaged or destroyed personal property. Businesses of any size and private non-profit organizations may borrow up to \$1.5 million to repair or replace damaged or destroyed real estate, machinery and equipment, inventory and other business assets. The loans are available for homeowners, renters and business owners whose property was damaged or destroyed in the fire.

As a result of this disaster, El Dorado County proclaimed a local emergency June 24, 2007, and subsequently requested state and federal assistance by a separate proclamation issued June 25, 2007. In response to El Dorado County's request, a proclamation for a State of Emergency was issued on June 25, 2007. Governor Schwarzenegger also toured the fire zone to see first hand the devastation that was caused. The also Governor announced the establishment of a Local Assistance Center to help provide state and local services to assist victims displaced by the wildfire, suffering property loss and economic and other damages.

Governor Schwarzenegger also issued two executive orders to help victims of the wildfire recover. On June 27, 2007, he issued an executive order to assist individuals that suffered losses by waiving fees for replacing state documents lost in the fire including vehicle registrations, driver's licenses and birth certificates. He issued another executive order on July 2, 2007 to help victims clean up and rebuild as quickly as possible by streamlining, and in some cases suspending, certain state rules regarding the removal and disposal of both hazardous and non-hazardous debris as well as dead and dying trees.

The Angora Fire began on June 24, 2007 in the North Upper Truckee area in South Lake Tahoe, California and was fully contained on July 2, 2007. The fire burned a total of 3,100 acres and destroyed 254 homes.

Governor Jim Gibbon's Press Release Announcing Commission

GOVERNOR GIBBONS ANNOUNCES MEMBERS OF THE TAHOE BASIN FIRE COMMISSION

Carson City – Governor Jim Gibbons today released the names of those who will represent Nevada on the joint Nevada-California Tahoe Basin Fire Commission.

The Memorandum of Understanding (MOU) signed by Governor Gibbons and Governor Schwarzenegger on Monday, July 23, 2007 states that each Governor shall appoint eight voting members and no more than three non-voting ex-officio members.

“Everyone— federal and state agencies, residents, management agencies, business owners and environmental entities— shares a common goal, an environmentally healthy and functioning Lake Tahoe Basin. The Lake Tahoe Basin and the forest resources must be managed by proven forestry practices based on sound science. I look forward to the commission’s review of the policies that currently govern forest management in the Tahoe Basin,” said Governor Jim Gibbons.

Governor Gibbons appointed the following members to serve on the Nevada-California Fire Commission:

1. **Co-Chair**, Honorable Sig Rogich, former U.S. Ambassador and Government Affairs Specialist
2. James M. Wright, Chief, State of Nevada Fire Marshal
3. Pete Anderson, Nevada Division of Forestry, State Forester
4. Michael D. Brown, Chief, North Lake Tahoe Fire Protection District
5. Jim Santini, Former Nevada Congressman and co-author of the Burton-Santini Act
6. John Koster, President of Northern Nevada Region of Harrah's Entertainment, Inc.
7. Bud Hicks, President, Glenbrook Homeowners Association
8. Bob Davidson, Lake Tahoe Basin Homeowner

Ex-Officio:

1. Allen Biaggi, Director of Nevada Division of Conservation and Natural Resources/TRPA
2. Leo Drozdoff, Administrator of the Nevada Division of Environmental Protection

Appendix B

Commissioner's Biographies

Pete Anderson (Nevada) was appointed Nevada's State Forester and Fire Warden in 2004 by Governor Kenny Guinn. After his graduation from the University of Nevada, Reno in 1975 with a Bachelor of Science degree in Agriculture, Renewable Natural Resources, he worked as a seasonal Park Ranger for the National Park Service and later owned and operated a landscape contracting and consulting firm focused on slope stabilization and disturbed site reclamation projects in the Lake Tahoe Basin. In 1992 he began state service with the Nevada Division of Environmental Protection in Mine Reclamation and moved to the Nevada Division of Forestry in 1995 as the Forest Stewardship Coordinator. He also served as Resource Program Coordinator and Deputy State Forester.

Allen Biaggi (Nevada) was appointed Director, Department of Conservation and Natural Resources, by Governor Kenny Guinn in August 2004. Prior to his appointment, he was the Administrator of the Nevada Division of Environmental Protection for six years and worked for the division for a total of 23 years. As Director of Conservation and Natural Resources, Director Biaggi oversees Environmental Protection, Forestry, State Parks, State Lands, the Wildhorse Commission, Natural Heritage and Water Resources. His professional affiliations include membership in the Tahoe Regional Planning Agency Governing Board, Colorado River Basin Salinity Control Forum, State Petroleum Board, Commission on Workplace Safety and Community Protection, and Western States Water Council. Director Biaggi was born in Carson City and is proud to be a second-generation native Nevadan. He holds a degree in hydrology from the University of Nevada, Reno.

Michael Brown (Nevada) has been involved in Fire and Emergency Medical Services for over 28 years in Northern California and Northern Nevada. Chief Brown is currently the Fire Chief of the North Lake Tahoe Fire Protection District (NLTFPD) and has held the following positions with that department: Assistant Fire Chief, Captain and Firefighter/Paramedic. Chief Brown spent three years with the Nevada Division of Forestry as a Battalion Chief and returned to NLTFPD as the Assistant Fire Chief. He has an Associate of Arts Degree in Fire Science and a Bachelor of Science in Fire Science and sits on several Fire/EMS Committees.

Kate Dargan (California Co-chair) has over 30 years of experience with CAL FIRE and was appointed this year by Governor Schwarzenegger as California's first woman State Fire Marshal. She served as the Assistant State Fire Marshal from 2005 to March 2007. From 2002 to 2005, Chief Dargan served as the Napa County Fire Marshal and was the Division Chief for Cooperative Fire Protection in 2001, where she was the CAL FIRE (formerly known as CDF) liaison to state agencies involved in disaster response including the Governor's Office of Emergency Services. Prior to joining the Cooperative Fire Protection, Chief Dargan served as Battalion Chief for the air attack base and conservation camp in Nevada County from 1997 to 2000, where she founded the Nevada County Fire Safe Council. Chief Dargan began her career with CAL FIRE as a firefighter in Santa Cruz County in 1977, before being promoted to Fire Apparatus Engineer and Fire Captain in San Luis Obispo and Monterey Counties from 1980 to 1994. Additionally, she is a member of the California Fire Chiefs Association, National Fire Protection Association and the American Planning Association.

Bob Davidson (Nevada) is a Lake Tahoe Basin homeowner and founder, with his wife Jan, of the Davidson Institute for Talent Development and the Davidson Academy of Nevada at the University of Nevada, Reno. Jan founded Davidson & Associates, an educational software company in 1982, and in 1989 Mr. Davidson left his position as an executive vice president of engineering and construction at the Parsons Corporation to become Davidson & Associates Chairman and CEO. Since 1997 they have focused on philanthropic endeavors to help young people become successful learners. He has also served as a director for both Pepperdine University and George Washington University.

Leo Drozdoff (Nevada) has been the Administrator of the Nevada Division of Environmental Protection (NDEP) since 2004. He joined the Division as a staff engineer in 1991 and was named Chief of NDEP's Bureau of Mining Regulation and Reclamation in 1996. He also held the position of Chief of Water Pollution Control, and was named Deputy Administrator for the Division in 2003. In addition to representing the Agency on numerous boards and commissions, Mr. Drozdoff is on the Board of Directors for the Ground Water Protection Council and is a Licensed Professional Civil Engineer in the State of Nevada. He holds a Bachelor of Science degree in Civil Engineering from Bucknell University and a Master of Business Administration from the University of Nevada, Reno.

Ruben Grijalva (California) was appointed the Director of CAL FIRE by Governor Schwarzenegger in April 2006. He served as acting Director of the department from January 2006 to April 2006. Director Grijalva was appointed State Fire Marshal in 2004 and served in this post until March of 2007. Previously, he served as Fire Chief for the Palo Alto Fire Department from 1994 to 2004, where he also was Assistant Fire Chief from 1990 to 1994. Director Grijalva served in the Sunnyvale Department of Public Safety from 1976 to 1990. During this period, he held positions in both the police and fire divisions before serving as Fire Marshal from 1985 to 1990. He is past president of the Fire Chiefs Department for the League of California Cities and the Santa Clara County Fire Chiefs Association. He is a member of the California Fire Chiefs Association and the International Association of Fire Chiefs.

A.J. "Bud" Hicks (Nevada) is President of the Glenbrook Homeowners' Association (GHOA), a planned unit subdivision of 228 homeowners that own residences in Glenbrook, on Lake Tahoe's eastern shore. GHOA owns and manages over 550 acres abutting both USFS and Nevada State Forests, and has over 1 mile of beaches fronting



Commissioners listen to testimony

on Glenbrook Bay. Bud Hicks is a senior partner in the law firm of *McDonald Carano Wilson* and has practiced for over 30 years as a Nevada lawyer primarily in the areas of gaming and business law matters. Mr. Hick's primary home is in Reno, and he maintains offices in both Reno and Las Vegas.

John Koster (Nevada) has been Regional President, Northern Nevada, for Harrah's Entertainment since 2005. He has 27 years of experience as a hotel/casino executive and is currently responsible for all aspects of the multi-property operations of Harrah's and Harvey's Lake Tahoe, Bill's Lake Tahoe and Harrah's Reno. He has served as a member of the Board of Directors of the Lake Tahoe Visitors Authority since 2005. His previous positions include General Manager and Senior Vice President, Harrah's Laughlin Casino and Hotel, President and Chief Operations Officer of the Desert Inn Resort and Casino in Las Vegas and Manager and General Manager of hotel properties in Hong Kong and Thailand.

Ron McIntyre (California) has lived, worked and served in various official capacities in the Lake Tahoe area for more than four decades. He currently does private consulting for businesses and public agencies in the Tahoe area and serves as director and president of the Tahoe City Recreation Association. From 1996 to 2005, Mr. McIntyre was the director of infrastructure and transportation development for the North Lake Tahoe Resort Association. Previously, he served as executive director of the North Lake Tahoe Chamber of Commerce from 1993 to 1996. He has also held the positions of elected director of the Tahoe City Public Utility District from 1980 to 1998; director of the Tahoe Truckee Sanitation Agency from 1966 to 1969 and 1971 to 1978; director of the Lake Tahoe Area Council from 1968 to 1969; and chair of the Graduation Requirements Committee for the Tahoe-Truckee School District from 1971 to 1973. He is a member of the North Lake Resort Association Board of the Directors and the TRPA Advisory Planning Commission, as well as serving as secretary for the Workforce Housing Association of Truckee-Tahoe.

Jeff Michael (California) has served as the Fire Chief of the Lake Valley Fire District for the past two years and has been with the District since 1979. Previously, he held the positions of Battalion Chief, Captain, Engineer and Firefighter. Chief Michael went to high school in South Lake Tahoe and has a vast knowledge of the Lake Tahoe Basin. He has an Associate of Arts degree in Fire Science and is a Certified Chief Officer with the State Fire Marshal.

Jim Peña (Federal) is the Deputy Regional Forester for State and Private Forestry in the Pacific Southwest Region of the Forest Service. His areas of responsibility are fire and fuels management, cooperative forestry, recreation and wilderness, engineering, acquisition management, safety and tribal relations. Prior to coming to this job Mr. Peña was the forest supervisor of the Plumas National Forest. He also brings experience from multiple agency-wide special assignments such as Agency Liaison to Undersecretary for Natural Resources and Environment in 2007, the re-engineering team for Human Resources in 2004, and the National Fire Management Review in 1999. He has held line officer positions as Deputy Forest Supervisor and District Ranger beginning in 1991 in California, Oregon and Washington. Mr. Peña began his career with the Forest Service as a Trainee Forester on the Rogue River National Forest in 1978. He graduated from Humboldt State University with Bachelor of Science in Forest Resource Management. Mr. Peña is a member of the Society of American Foresters.

John Pickett (California) has served as the coordinator from California for the Nevada Fire Safe Council since 2005. His duties include managing forest fuel reduction projects adjacent to communities and helping homeowners create defensible space around their homes. Mr. Pickett also founded the Sugar Pine Foundation, a group dedicated to restoring white pine forests in California, in 2004. Previously, he served as a Forestry Technician with the U.S. Forest Service from 2001 to 2004. Mr. Pickett also was a private business consultant for real estate development and the construction industry from 1995 to 2000. He is a member of the Society of American Foresters.

Sig Rogich (Nevada Co-chair) is a life-long Nevadan and President of The Rogich Communications Group, an international advisory firm that specializes in the areas of business development, crisis communications, strategic planning, media relations and government affairs. A former U.S. Ambassador to Iceland and Assistant to President George H.W. Bush in the White House, Mr. Rogich founded R&R Advertising and built it into one of largest advertising agencies in Nevada and the southwest. Mr. Rogich has worked in a senior capacity for numerous local, state and national elections including the Presidential campaigns of Ronald Reagan, George H.W. Bush, George W. Bush, and current presidential hopeful Senator John McCain. He has advised candidates and elected officials at all levels of government and held positions with several Republican organizations such as the Republican Governor's Association. He is a former Regent for the University of Nevada system, Emeritus Trustee and was awarded "Distinguished Nevadan" in 1992, one of the state's highest honors. Mr. Rogich served as Chairman of the Nevada State Athletic Commission as well as on numerous other boards and commissions including the USO (United Service Organizations), as appointed by the President. He is currently Chairman of the Clark County Public Education Foundation, a position he has held since 1997; an Advisory Board member for the Reynolds School of Journalism and the Las Vegas Valley Water District; and a member of the Board of Directors for Opportunity Village, one of America's largest privately funded work training centers for the disabled, Keep Memory Alive, the foundation for the Lou Ruvo Brain Institute, Spring Valley Hospital, and Worlddoc, a national health management system company.

Jim Santini (Nevada) represented Nevada in the United States Congress from 1975-83 and previously practiced law and served as a Justice of the Peace and District Court Judge in Clark County. He has represented the National Tour Association (NTA) on federal legislation and regulation issues since 1983 and in 2005 received the NTA's Bob Everidge Lifetime Achievement Award. During his service in Congress he was co-author of Public Law 96-586, the Santini-Burton Act, which when passed in 1980 declared that the environmental quality of the Lake Tahoe Basin was jeopardized by over-development of sensitive lands and that the unique character of the Lake Tahoe Basin is of national significance deserving further protection.

Cindy Tuck (California) was appointed in July of 2007 as Undersecretary for the California Environmental Protection Agency (Cal/EPA). She has more than twenty years of air quality, water quality and hazardous materials management experience in California. Prior to this appointment she served as Cal/EPA's Assistant Secretary for Policy. Before joining the Schwarzenegger Administration, she was General Counsel for the California Council for Environmental and Economic Balance. Ms. Tuck is a licensed Professional Civil Engineer and a Member of the State Bar in California. In addition to a Juris Doctorate degree from the



California-Nevada Tahoe Basin Fire Commission at work

University of the Pacific, she holds a Bachelor of Science degree in Civil Engineering and Master of Science degree in Environmental Engineering, both from the University of Illinois.

John Upton (California) is a victim of the Angora Fire and lost his rental home in the fire. He has served as a City of South Lake Tahoe public appointee to the Tahoe Regional Planning Agency's (TRPA) Advisory Planning Commission since 2007. Mr. Upton previously served on the TRPA Governing Board from 1990 to 1998 and again in 2005. He served on the Tahoe City Council from 2002 to 2006 and served on the El Dorado Board of Supervisors for two terms from 1991 to 1999. In 1998, Mr. Upton was the president of the California State Association of Counties. He was elected city treasurer for the City of Tahoe from 1974 to 1990. John Upton is a former member of the School Board for the Lake Tahoe Unified School District and the Tahoe Chamber of Commerce Board.

Patrick Wright (California) has served as the Executive Director of the California Tahoe Conservancy, a state agency charged with protecting and enhancing natural resources and recreational opportunities in the Lake Tahoe Basin, since 2006. He previously served as director of the CALFED Bay-Delta Program from 2000 to 2005, where he led a consortium of agencies and stakeholders in managing one of the nation's largest collaborative water management programs. Mr. Wright also served as Deputy and Assistant Secretary for the California Resources Agency in 2005. Mr. Wright served on the California Coastal Conservancy Board of Directors from 1999 to 2000.

James M. Wright (Nevada) was appointed Nevada State Fire Marshal in 2006. Previously, he had a 30-year career with the California Department of Forestry And Fire Protection (CDF), during which time he rose through the ranks from Firefighter to Deputy Director, Chief of Fire Protection, with responsibility for all of CDF's statewide Fire Protection programs. He spent much of his career in the fire prone wildland urban interface areas of Southern California after serving in fire protection with the U. S. Air Force. He was a Department representative providing testimony and support to the Governor's Blue Ribbon Committee created following the Southern California Fire Seige of 2003.

Appendix C

Process for Developing Findings and Recommendations for the CALIFORNIA-NEVADA TAHOE BASIN FIRE COMMISSION

1. Anyone can propose a **FINDING** for consideration by the committees. This includes Commission members, agency staff, and members of the public. For the sake of consistency this should be done using the template to document a proposed Finding, and to provide a short background statement to support or justify the proposed Finding.
2. Findings should be submitted electronically to Commission staff (dana.cole@resources.ca.gov) so they can be logged in with a tracking number, and assigned to the appropriate committee for consideration.
3. If a majority of the committee agrees to consider a proposed Finding, the committee should develop one or more **RECOMMENDATION(S)** for consideration by the full Commission for forwarding to the Governors, including an analysis of the potential impacts of implementing the Recommendation(s).
4. The committees are responsible for identifying Findings and forwarding proposed Recommendations to the full Commission. They may also choose to assign working groups, committee members, and/or their respective staff, to develop the impact analysis of implementing Recommendations. (Please refer to the Findings and Recommendations Template, below.)
5. Due to the March 21, 2008 deadline for submitting Findings and Recommendations to the Governors, proposed Findings and Recommendations should be received no later than **February 15, 2008** to allow time for Commission consideration.

FINDING AND RECOMMENDATION(S) TEMPLATE

Submitted by: _____

Finding: *(i.e. Conclusions reached after investigation and/or evaluation of facts)*

Background and Supporting Evidence: *(A short statement justifying the Finding and describing desired outcome(s); usually no more than half a page.)*

Recommendation(s) *(Based upon an analysis of the Finding, the following recommendation(s) should be made to the Governors):*

Impacts of Implementation: *(The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):*

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost
- Funding source
- Staffing
- Existing regulations and/or laws

Analysis of impacts on the following factors is OPTIONAL:

- Operational
- Social
- Political
- Policy
- Health and Safety
- Environmental
- Interagency

Appendix D

Findings and Recommendations as Adopted by the Commission

Finding 1

Unique Quality of Lake Tahoe

The unique water quality and clarity of Lake Tahoe is a natural resource of global significance and is dependent on protection from catastrophic wildfires in the Lake Tahoe Basin.

Background and Supporting Evidence:

Lake Tahoe is one of the three clearest lakes of its size in the world. The water quality of the Lake, and its tributaries, highly contributes to the scenic quality of the Lake Tahoe Basin, yet water quality depends on a fragile balance among soil, vegetation, and human impact. The focus of water quality protection in the Basin is to minimize human disturbance, and to reduce or eliminate the addition of pollutants that result from development or other disturbance. There is perhaps no single disturbance event with greater potential deleterious impact on the Lake than a catastrophic wildfire.

Recommendation(s)

1. Fuel reduction projects must be strategically designed and prioritized to minimize the risk of catastrophic wildfire.
2. Recommendations supported by other findings in this report that promote forest fuel reduction, help provide funding or labor, or break down barriers to implementing projects should be approved, implemented and funded.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- **Cost** The costs of catastrophic wildfire far exceed the costs of implementing fuel reduction projects that effectively reduce risk of catastrophic wildfire.
- **Funding source** Funding for fuel reduction projects must be annual and reliable in public agency budgets.
- **Staffing** Staffing must be qualified, trained and increased to properly address the work load of forest fuel reduction.
- **Existing regulations and/or laws** Existing regulations and laws that pose undue impediments to implementation of fuel reductions projects must be streamlined or modified.

Finding 2

Increasing Risk of Catastrophic Fire

The risk of wildfire in the Tahoe Basin is extreme and the probability of catastrophic fire occurrence is increasing.

Background and Supporting Evidence:

The Lake Tahoe Basin is a fire-prone environment where frequent, low intensity fires played a critical ecological role, risk of summer fires is high to extreme every year, and every acre of native forest will eventually burn again. The natural fire regime of low elevation forests in the Lake Tahoe Basin was characterized by a 5 to 10 year fire return interval and very open stands of large trees as evidenced by studies of fire scars and historic photographs.

Due to the unprecedented absence of natural fire and its thinning and recycling effects, and the lack of proper forest management, the forests in the Lake Tahoe Basin are now composed of more trees, surface fuels, and overall biomass available to burn in wildfires than ever before. Under healthy forest conditions, native bark beetles play an important ecological role by killing stressed and weakened trees every year, but under current forest conditions in the Basin, they now kill trees in record numbers due to the dense forest structures in which most, if not all, trees are stressed and weakened by extreme tree to tree competition.

Of the three factors that affect wildland fire behavior (fuel, weather and topography) fuel is the only factor that we can manage.

Recommendation(s)

1. The restoration of forests to a fire-resilient condition (that is, a forest that can mostly survive and thrive with recurring wildland fire) should be a common management goal of all public land management agencies, regulatory agencies, and private property owners in the Lake Tahoe Basin.
2. The Governors of California and Nevada should adopt the priorities of life, property, and the environment, in that order, with respect to fire safety, fire prevention, and such other matters within the jurisdiction of the commission.
3. It is further recommended that the Governors of California and Nevada advise and recommend to TRPA and the various state agencies having jurisdiction over environmental matters within the Tahoe Basin, that these priorities should be incorporated in the order set forth above to the maximum extent possible in the standards and procedures applied by such agencies within the Basin.

Impacts of Implementation:

- Cost The cost of fire suppression in forests not treated for fuel reduction is greater than the cost of implementing the fuel reduction treatments. Fuel reduction treatments will protect our forests for benefits of future generations.

- Funding source Funding sources will have to come from Federal, State, Local and Private to adequately restore and protect the forests of the Lake Tahoe Basin.
- Staffing Staffing must be qualified, trained and increased to properly address the work load of forest restoration.
- Existing regulations and/or laws Existing regulations and laws must be streamlined to improve efficiency of implementing forest fuel reduction projects.



US Forest Service

Untreated SEZ burned in the Angora Fire

Finding 3

Wildfires increase greenhouse gas emissions. Avoiding forest fires through fuels management is an important way to reduce greenhouse gas emissions. Using the forest biomass from fuels management activities can contribute to expansion of renewable energy sources.

Background and Supporting Evidence:

Healthy forests, achieved through fuels management strategies increase forest's ability to store carbon, and reduce the threat of catastrophic fires.

Fuels Management/Biomass strategies are designed to reduce greenhouse gas (GHG) emissions through the use of timely fuel hazard reduction treatments on suitable forest land throughout the state. While hazardous fuel reduction techniques include fire use, biological methods, and mechanical treatments, this strategy focuses solely on mechanical treatments as a means of reducing fire hazard. (Mechanical treatment can include crushing brush and other fuels as well as removing trees that serve as ladder fuels to the crown.) This strategy combines the fire prevention benefits of fuel hazard reduction with the supply of biomass for use in bio-power and bio-fuel production. Therefore, this strategy supports the goals of the Bioenergy Action Plan, including the goal to enhance the supply of biomass through fuel hazard reduction (California Energy Commission, 2006).

This strategy reduces GHG emissions through two primary mechanisms:

Through hazardous fuel treatment, the frequency and severity of wildfires will be reduced. As a result, CO₂ emissions will be reduced and more carbon will remain in forest biomass.

The fuel (biomass) removed as part of the treatment can be used to produce electricity and liquid fuels. This biomass-based energy can displace the use of fossil energy (natural gas for electricity production and petroleum-based gasoline), thereby displacing the GHG emissions from the use of these fossil fuels.

This strategy is constructed in two parts. The first part focuses on the fuels treatments that can be accomplished through state funding and coordination with federal forest management activities. This element of the strategy is limited primarily by the funds available to support treatment activities.

The second element is focused on producing biomass to support the goals of the Bioenergy Action Plan. The forest lands requiring treatment are significantly larger than the areas that can be addressed with available funding in the first part of the strategy. By promoting the use of biomass for bio-power (electricity) and bio-fuel production, the strategy proposes to achieve forest management goals by satisfying the growing demand for renewable energy sources.

It is commonly accepted that the reduction total forest fuel load along with changing the structure and arrangement of those fuels has a positive effect on the ability of fire suppression forces to control a fire. Those benefits occur both when a fire is small, thus increasing the success rate of initial attack forces; and once a fire becomes large by providing a fuel bed that encourages crown fires to fall to the ground where suppression forces can gain the upper hand.

Though the benefits are recognizable, the ability to quantify those benefits has yet to be fully developed. The Department in cooperation with numerous other federal and state agencies have undertaken research projects to not only identify how fuels treatment modifies real time fire behavior, but reduces the risk of fire starts becoming large damaging events.

By focusing on the complementary goals of preventing wildfires and reducing greenhouse gases, the Governors of Nevada and California have an opportunity to enact a collaborative approach to ensuring healthy forests, increasing carbon sequestration, and utilizing biomass which will help reduce the threat of forest fires.

Recommendation(s)

1. California and Nevada should prevent catastrophic fires in the Lake Tahoe Region and reduce the associated greenhouse gas emissions through appropriate fuel reduction methods (fuels management).
2. In California, the Forestry sub-group of the Climate Action Team should develop coordinated measures for wildfire reduction and biomass utilization. (The California Resources Agency leads this sub-group). Nevada should continue to develop effective measures for wildfire reduction and biomass utilization.
3. California and Nevada should direct forest research funding, as available, to address issues related to fuel reduction efforts, reducing emissions from decaying material, and carbon sequestration.
4. California and Nevada should seek economic incentives, including accelerated depreciation of equipment, for biomass activities.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost

Per-acre costs vary widely depending on treatment prescription, volume and type of fuel being removed, equipment configuration, site conditions, and other factors (USDA Forest Service Research & Development/Western Forestry Leadership Coalition 2003). For purposes of this analysis, the amount of treatment that can be supported is estimated based on a cost of \$400/acre as an average cost of harvest and removal to the roadside.

- Funding source

In California funding for fuel treatment activities in the short term will be through direct appropriations from the general fund or through bond activities. For example, Proposition 40 bond funds to support fuel reduction activities that protect watersheds and water quality, which is estimated at \$1million annually for 2008, 2009, and 2010.

Proposition 84 bond funds provided to the California Tahoe Conservancy and the California Conservation Corps may support these activities. Prop 84 funds provided to CAL FIRE may require further action by the legislature to be expended for some of these activities.

Climate benefits will be an indirect result of the fuel treatment projects. Long-term potential for fuel treatment funding does exist to develop market based trading in carbon. The challenge will be to develop credible trading mechanisms to accommodate whatever market develops.

- Staffing

State and Federal efforts on related projects may provide some staffing resources.

- Existing regulations and/or laws

In 2006 California passed the Global Warming Solutions Act of 2006 (AB 32). This Act sets in statute an greenhouse gas (GHG) emissions target to reduce 2020 emissions to 1990 levels. While GHG reduction efforts will focus on a number of different gases, emissions of CO₂ are a key part of the overall strategy to meet the 2020 emissions reductions targets.

Forests are recognized as part of the GHG solution because their biological processes remove CO₂ from the atmosphere and store (sequester) carbon in wood and foliage while respiring oxygen. It is also recognized that forests emit large quantities of CO₂ and other GHGs during wildfire. Reduction in GHG emissions from wildfire will be a key component to meeting overall GHG reduction targets as part of the AB32 GHG reduction plan.

Analysis of impacts on the following factors is OPTIONAL:

- Operational
- Social

Managing hazardous fuel will ensure a safer environment for communities living in close proximity to potentially combustible forest zones.

- Political

A proactive approach in managing hazardous fuels will reflect the Governors' commitment to preventing future catastrophic forest fires. This will also send a message for similar action to be taken in other regions susceptible to wildfires.

- Policy
- Health and Safety

The reduction of greenhouse gas emissions caused by forest wildfires will reduce the threat of respiratory problems posed by such emissions.

- Environmental

Healthy forests will help to protect the Tahoe Basin biosphere. Preventing fires will reduce greenhouse gas emissions and reduce the threat of large post-fire releases of sediment into watersheds that feed into Lake Tahoe.

Finding 4

Resource managers and regulators need tools to help them objectively evaluate alternative strategies for reducing fire risk to public safety, property values and the environment. The challenge they face is that different strategies often have results that are not easily compared. In such cases, decision support systems that evaluate, quantify, and compare competing risks that can help resource managers and regulators reach agreement and implement projects more quickly.

Background and Supporting Evidence:

Wildfire in the Tahoe Basin poses a risk to people, communities, lake clarity, and fish and wildlife habitat. Fuel reduction projects can alleviate those risks, but may also harm those same values, especially in the short-term. Comparing risks and benefits of fuel reduction projects to risks from severe wildfire require land managers and regulators to analyze and compare short- and long-term environmental effects to different resource values. Because public land managers and regulators to analyze and compare impacts over time. Because public land managers are currently required to conduct this kind of analysis, analytical tools that address parts of these questions already exist. These tools need to be refined and validated for application in the Lake Tahoe Basin, which has unique concerns for sediment loading in Lake Tahoe.

For example, a comparison of untreated and treated forests would evaluate their expected erosion rates and risks to public safety and property values. The untreated forest scenario would include the effects of wildfire over some fire return interval. The treated forest scenario would, for the same time period, calculate what erosion would occur from fuel reduction activities, prescribed burn, increased road traffic, and modified fire behavior. An extension of the analysis would calculate the effects of reduced wildfire severity on public safety and property damage. To do this, the tools would have to be linked to a geographic information systems database so that information is geographically referenced.

If this kind of analysis is done for alternative treatment prescriptions, decision makers could weigh one treatment that minimizes fire risk but causes significant erosion, with another practice that causes less erosion but requires more frequent treatments to maintain. When treatment costs are included, a net present value analysis could also help reduce costs over the long-term.

Both resource managers and regulators recognize that scientific inquiry, resource assessment, and interpretation of available data are critical for the development and implementation of effective environmental policy. They know they must use the best available scientific information to protect lives and property, as well as meet environmental standards for water and air quality, soil conservation, wildlife, fish and vegetation communities in the Tahoe Basin.

Recommendation(s)

The Multi-Agency Coordinating Group (MAC), in collaboration with management and regulatory agencies, will develop a partnership with scientific experts to develop tools for evaluating alternative strategies for reducing fire risk in the wildland urban interface. These tools will calculate the effect of different practices on public safety, property values and the environment. Scientists will work with the MAC through the steps in a comparative risk assessment, which include:

- This is for future project planning and will not hold up any current projects.
- Formulating the problem. This includes articulating the purpose of the

assessment, defining the problem, and planning how to characterize and analyze the risks. Information about sources of risk and their effects are synthesized.

- Developing a conceptual model of the problem situation. The model should explain the relationships between the risk factors and their impact on ecological values.
- Selecting Assessment Endpoints. These are explicit definitions of the values to be protected.
- Conducting an analysis. This includes collecting and analyzing data.
- Characterizing the risks: Describe the results of the risk integration. This will include a summary of assumptions, scientific uncertainties, and strengths and limitations of the analysis.
- Preparing results, outputs and modeling tools that agencies can use to make informed choices and set priorities for future actions.

Impacts of Implementation:

- Cost

The estimated cost of implementing this recommendation is \$750,000. This could be distributed over three years at \$250,000 per year, or for two years at \$400,000 the first year and \$350,000 the second.

- Funding source

The Southern Nevada Public Land Management Act (SNPLMA) funds Tahoe Science projects administered by the Pacific Southwest Research Station. Round 8 projects could implement this recommendation. Alternatively, Round 9 or Round 10 SNPLMA RFPs could highlight the need for this research. For its part, the MAC (and cooperating agencies) can manage the project by redirecting a minimal amount of existing funds.

- Staffing

Cooperating agencies in the MAC will provide existing staff to manage the project. Scientific staff will be determined through a competitive grant proposal process.

- Existing regulations and/or laws

Will comply with existing regulations and laws. May Identify strategic opportunities for demonstration projects that impose additional short-run costs in return for scientific information that reduces costs in the long-run.

Finding 5

The forests surrounding Lake Tahoe are not healthy and their long term prognosis is poor. The condition of the Basin's forests and the risks of fire, whether caused by man or nature, present disasters waiting to happen, with severe potential for loss of life, massive property destruction, and inestimable pollution of the Lake.

The risk of catastrophic fires within the Lake Tahoe Basin presents an imminent threat to life, property and the environment of this nationally significant and unique natural resource.

Catastrophic wildfire respects no territorial boundaries, and endangers all within its path. Consequently, the Lake Tahoe Basin needs urgent fire mitigation actions across a wide spectrum of interconnected systems in order to address this clear and present danger, including fire suppression, fuels management, economic and land-use planning, and a multi-layered regulatory environment.

Obtaining State and Federal Emergency Declarations will assist in providing all possible solutions as rapidly as possible in order to protect the public as well as the clarity of Lake Tahoe without sacrificing necessary environmental protections.

A mechanism to monitor the accepted recommendations will help ensure that progress is made toward those recommendations and maintained over time.

Many of the Commission's recommendations, if adopted, will require implementation efforts by various governmental jurisdictions and entities in order to address the emergency posed by these risks. Copies of the Commission's final Report should therefore be provided to all relevant government officials for review and such action as determined to be appropriate and necessary.

Background and Supporting Evidence:

Public safety and environmental improvements in the Lake Tahoe Basin are severely threatened by the overarching hazard of wildfire.

The Lake Tahoe environment includes the people and communities within the Lake Tahoe Basin as well as the Lake itself.

Lake Tahoe is a recognized significant and unique shared natural resource, and as such, warrants a significant and unique approach to hazard mitigation.

The potential of the wildland fire hazard within the Lake Tahoe Basin is expertly estimated to be catastrophic in magnitude of risk. This potential was demonstrated by the 3,100-acre Angora Fire in June, 2007.

The threat of catastrophic fire and its specific risk to the water quality of Lake Tahoe is substantial and defined by the geographic boundaries of the Lake Tahoe Watershed Basin. This risk has predictable harmful consequences to public and environmental safety.

The available mitigations to reduce this risk have been identified and can be implemented with a systematic approach. These available and reasonable mitigations serve the public and environmental interest, and will result in a reduced threat to a significant and unique resource.

The purpose of the Emergency Declarations should therefore be to reduce the threat that catastrophic wildfire in Lake Tahoe Basin poses to life, property, and the environment and to facilitate the work that must be done to preserve and protect this unique national treasure.

Recommendation(s)

1. The Governors of Nevada and California should each respectively declare a state of emergency exists in the Lake Tahoe Basin, and recommend to the President of the United States that a federal state of emergency declaration of emergency also be declared.
2. The Emergency Declarations should at least address the following:
 - Immediate emergency funding as recommended
 - Defensible Space should be achieved on every residential property within the Basin within 5 years
 - Development of a centralized information system to inform agencies and the public of defensible space requirements and to monitor the progress of such efforts
 - Urban fuel treatments should be accomplished on all public urban lots within 5 years
 - Fuels Hazard Reduction Treatments on the 68,000 acres of public open lands in the Tahoe Basin should be accomplished within 10 years or earlier, if possible, and a realistic program be developed and implemented for maintenance of these publicly owned lands in a fire safe condition in the future
 - A sustainable biomass removal and/or elimination plan for the maintenance of these treatments should be developed and implemented
 - Ignition-Resistant building standards for all new construction within the Basin should be rigorously enforced
 - Ignition-Resistant roofing should be required on all structures throughout the Basin within 10 years
 - Permanent funding partnerships between local, state, and federal revenues should be established as quickly as possible to maintain these risk mitigations
 - A wildfire risk model should be developed that incorporates forest fuels management, community safety actions, watershed health, and lake clarity within 5 years
 - Efforts should be immediately undertaken to restore the forests burned in the Angora Fire. Demonstration of Lake Tahoe as a national pilot model for wildland-urban-interface risk mitigation including public safety, healthy forest management, biomass sustainability, and watershed improvement.
 - It is recommended to add CAL FIRE resource management, fire prevention and fire protection to the Lake Tahoe basin on a 24 hour-seven day a week basis during the period of time while permanent staffing is being evaluated.
3. The States' Declarations should provide that California-Nevada Tahoe Basin Fire Commission should be continued or some similar group representing the Governors of the States of California and Nevada should be established in order to monitor the implementation progress of the Commission's recommendations that are acted upon by the Governors of California and Nevada.

4. The Emergency Declarations should not waive environmental processes that ensure water quality protections within the Basin, but should clarify the need for inclusion of wildfire risk into those analyses and the importance of moving quickly and without undue delay to ameliorate the risk of catastrophic fire to the Lake Tahoe Basin and its residents.
5. It is further recommended that copies of the Commission's final Report be provided to all elected officials as requested, and to the members or appropriate representatives of the various administrative agencies having jurisdiction within the Lake Tahoe Basin, including the following:
 - All county commissioners of the five counties located within the Basin;
 - All city council members of the cities located within the Basin;
 - All members of the Legislatures of the States of California and Nevada;
 - All members of the Congressional Delegations of the States of Nevada and California;
 - All members of the Governing Board of the TRPA; and
 - All members or other suitable representatives of any State agencies having jurisdiction over all matters within the Basin relating to fire prevention and control, public health and safety, or the environment.

Impacts of Implementation:

- Cost – States will cover the costs of its own members for any continued work directed by the Governor's. See "Economic Issues" and for details of the Emergency Declaration funding.
- Funding source – Emergency Declaration revenue sources come from a variety of sources.
- Staffing – The Emergency Declaration will require additional staffing (estimated 1-2 PY) to assist in tracking, monitoring, and dispersing specific funds. It is likely this staff would be merged with other functions identified in the Commission Report or subsequent planning actions.
- Existing regulations and/or laws – California and Nevada law for state emergency declarations would need to be referenced as would federal law for a Presidential Declaration.

Finding 6

A mechanism should be established to monitor the Governor accepted recommendations of the Bi-State Fire Commission to ensure those recommendations are carried out, implemented and maintained over time.

Background and Supporting Evidence

The mission of the Bi-State Fire Commission is to make recommendations to the Governors of Nevada and California to reduce the threat of fire in the Lake Tahoe basin and preserve and protect lives, property and Tahoe's unique environmental qualities. It must be recognized that some or all of the recommendations that may be accepted by the Governors will take time to implement. A mechanism should be established to monitor the progress of the recommendations, ensure they are put into place and are completed in a timely fashion and remain in place over time.

Recommendation(s)

1. The authority of the Bi-State Fire Commission should be extended or a successor commission be established by the Governors of the States of Nevada and California to oversee the recommendations to the Governors and to insure progress is made on their implementation. This successor commission should meet periodically and report on at least a yearly basis to the public and the Governors on the status of the implementation of the Commission's recommendations and on fire pre-suppression and forest health preservation efforts within the Lake Tahoe Basin.
2. It is recommended that the Successor commission have the following composition, with its members to serve at the will and pleasure of the respective Governors:
 - 2 Co-chairs, with 1 from each state
 - 2 Fire professionals, with one from each state
 - 2 public members, with one from each state
 - 1 Federal representative to be appointed by federal authorities
3. It is further recommended that this successor commission be authorized to review and report on the status of the implementation of the recommendations and the goals set forth in the Commission's Report including, but not limited to, the specific goals set forth in the Commission's recommendations regarding Catastrophic Fire and Emergency Declarations.

Impacts of Implementation

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost: Each state would cover the costs of its members on the Standing Committee for meetings and other activities (minimum cost - travel and per diem only).
- Funding Source: Each state would provide necessary funding for its representatives on the Standing Committee (using existing staff. Cost would be for travel and per diem only).
- Staffing: Each state would be represented on the Standing Committee by three representatives each serving in a volunteer capacity.
- Existing regulations or laws: None. It would be the responsibility of the Standing Subcommittee to oversee the implementation of the Governors' recommendations.

Finding 7A

The existing system to permit fuel reduction projects outside of urban areas is often confusing, sometimes redundant and complex. Elements that require permit streamlining include:

Planning

Stream Environment Zones

Steep Slopes

Use of Hand Crews and Low-Impact Methods

Broadcast and Pile Burning

Monitoring

Recommendation No. 1a:

The regulatory restrictions and limitations presently existing, even as presently modified by the TRPA and the LRWQCB, should be further modified, if not waived, on an expeditious basis and no later than the beginning of the 2008 fire season, to allow the use of readily available mechanized equipment and vehicles within SEZs to allow for the effective, efficient, and economical removal of hazardous materials. Restrictions regarding the use of mechanized equipment in such areas should be greatly and substantially reduced to make such cleaning and clearing activities within SEZs feasible over the period of time reasonably necessary to complete the Community Wildfire Protection Projects relating to the various communities located within the Lake Tahoe Basin.

Recommendation No. 1b: Continue and increase implementation of thinning and prescribed fire treatments in an expeditious manner to promote a fire resilient forest.

Prescribed Fire and fuel treatment must be promoted as effective means of managing for a fire resilient forest. Practitioners of prescribed fire should develop educational materials outlining the benefits of prescribed fire and fuel treatments to better inform regulators and the public.

Recommendation No. 2:

The commission recommends that Lahontan and TRPA in cooperation with land management agencies develop a common list of accepted BMPs for mechanical work in SEZs that will be used beginning in the 2008 season to qualify as exempt and qualified exempt projects. In addition to the BMPs used in 2008, a reference guide defining equipment use in SEZs shall be developed by March 2009 and reviewed and updated as new information is collected. This guide will be completed through a cooperative inter-agency effort. TRPA and Lahontan MOUs shall rely on this adaptive process to allow SEZ disturbance as new BMPs are developed and implemented.

Recommendation No. 3

The Governors of the States of California and Nevada should request the TRPA Governing Board to expeditiously establish within its ordinances a clear definition, in plain English, setting forth standards as to what constitutes a stream environment zone for the purposes of clearing such areas of hazardous fuels. The standard should be adopted for the purposes of providing a standard that can be uniformly applied by all agencies having environmental regulatory authority in the Basin, eliminating subjective determinations as to such matters, and encouraging the removing fuels materials from SEZs within populated areas of the Basin and the surrounding WUI. The definition should define SEZ areas in

appropriate gradients of sensitivity to equipment use and should be applied uniformly on a Basin-wide basis. The Commission further recommends TRPA: (1) update criteria for delineating SEZs on the ground; (2) incorporate the new natural Resources Conservation Service Soil Survey; and (3) clarify secondary criteria for delineating SEZs related to vegetation types, soil characteristics, and floodplain identification. A crosswalk will be developed to reference SEZs to watercourse and lake protection zones (WLPZs) in the California Forest Practice Rules. It is also recommended that the LRWQCB and all other state agencies having jurisdiction over environmental matters within the Basin should be directed by the respective Governors to apply the same uniform definition and standards in determining what constitutes a stream environment zone for their own regulatory purposes within the Tahoe Basin.

Recommendation No. 3a : In the interim and, in the event the TRPA does not establish such a uniform definition of SEZ, the Governor of the State of California should direct, within the framework of his legal authority, all California agencies having jurisdiction over environmental matters within the Tahoe Basin, including the LRWQCB, to apply the provisions of the California Forest Practices Act relating to watercourse protection with regard to SEZs in the Basin. The standard practices prescribed by said Act are understood by potential contractors, and their use will eliminate an impediment to bidders for such fuel reduction projects in the Basin. Further, the Governor should require any deviation from the use of such standard forest practices that results in the imposition of stricter standards to be reported by the agency requiring such deviation with an explanation of the environmental and efficiency tradeoffs considered by such agency when requiring stricter standards to be applied.

Recommendation No. 3b

The Commission recommends TRPA and Lahontan grant exceptions for disturbance within SEZs for the purposes of completing fuel reduction projects (with equipment) necessary to protect public health and safety as identified in the community wildfire protection plans. The Commission recommends both regulatory boards grant blanket exemptions to a group of fuel reduction prescriptions when the tools or operating procedures described in the Reference Guide (as described in Recommendation # 2 above) are developed and implemented.

Recommendation No. 4

The Commission recommends for fuel treatment projects with potentially significant environmental impacts all affected regulatory agencies rely on a single or joint environmental analysis and review process (e.g. EIS/EIR) to reach agreement on project specifications, permit conditions, (if applicable), and monitoring.

Recommendation No. 5

The Commission recommends raising the minimum diameter limit of live trees requiring a TRPA Tree Removal Permit from 6 inches diameter at breast height (dbh) to 14 inches dbh on all properties throughout the Lake Tahoe Basin.

Recommendation No. 6

The Commission recommends allowing winter operations with heavy equipment for fuel reduction over snow or over frozen ground and not in SEZ through the Lahontan Waiver Category 1b or 1c Eligibility Criteria.

Recommendation No. 7

The Commission recommends TRPA and Lahontan Regional Water Quality Control Board make changes to existing waivers, memoranda of understanding, plans and ordinances such that forest treatment projects involving hand crews are no longer required to submit permit or waiver applications

under any circumstances. Projects involving hand crews may be included in an annual spreadsheet submitted by April 1st and amended as needed by the project proponent each year to the Multi-Agency Coordination (MAC) Group or the Tahoe Fire and Fuels Team (TFFT) with project identification, project contact, acres to be treated, and location for all proposed hand thinning treatments. Project proponents may amend the spreadsheet as needed. All agencies and interested public shall have access to this information

Recommendation No. 8

The Commission recommends TRPA, Lahontan, USDA Forest Service, and other affected agencies amend their plan and ordinances to allow equipment use on slopes greater than 30% based on current and future technology, and current forest practices to ensure resource protection.

Recommendation No. 9

The Commission recommends as part of forest fuel reduction projects in SEZs, regulatory agencies allow spreading of chipped material to acceptable depths where appropriate.

Recommendation No. 10

The Commission recommends incorporating lessons learned from research and monitoring efforts into future fuel reduction project designs, eliminating the need to continue the same level of monitoring into all projects.

Recommendation No. 10a

The Commission recommends developing and maintaining a single clearinghouse, such as the Tahoe Integrated Information Management System (TIIMS), for compiling information on fuel reduction projects, including project effectiveness and environmental effects. The Commission further recommends that the USDA Forest Service in collaboration with the Tahoe Science Consortium and the general science community conduct a review of the available scientific literature that may be relevant to forest management practices in the Lake Tahoe Basin. The purpose of the review is to gain a comprehensive understanding of what past research, including studies outside the Lake Tahoe Basin, has discovered that can be applied to the key forest management issues that land managers face in the Lake Tahoe Basin. Key topic areas include: Impact of fire on air quality, Key soil properties and conditions (biomass accumulation and fire), Water quality and forest biomass management practices, fire and fuels management including vegetation and wildlife response. (This work was initiated in 2007 and is anticipated to be completed in 2008)

Recommendation No. 10b

The Commission recommends that where project proponents lack research expertise, any monitoring, research, and evaluation beyond project implementation monitoring or visual monitoring and inspections be conducted by a third party.

Recommendation No. 10c

The Commission recommends the USDA Forest Service evaluate the available information and identify what types of information are known and what questions still need to be answered for the Tahoe Basin so that any future research or demonstration projects be focused on answering the most important unanswered questions (Anticipated Spring 2008).

Recommendation No. 11

The Commission recommends TRPA and Lahontan plans and policies be updated to emphasize the importance of fuel reduction activities in the Tahoe Basin. Revisions of policies shall be focused on facilitating implementation of these projects.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – TRPA, Lahontan and other agency’s staff time will be required initially, while streamlining will relieve long term staffing needs of multiple agencies.
- Funding source –SNPLMA, state grants, state funds
- Staffing – comprehensive
- Existing regulations and/or laws –multiple

OPTIONAL analysis of impacts:

- Operational – improves efficiency and cost effectiveness
- Social – none
- Political – positive
- Policy - none
- Health and Safety – assists landowners in achieving fuel reduction goals and reducing wildfire risks.
- Environmental – assists landowners in reducing the potential for a catastrophic wild fire while ensuring environmental resources are protected. Potential environmental impacts from increased vegetation management and soil disturbance, especially in sensitive habitats. Environmental analysis needed to adopt MOUs, revise waivers and relax existing regulations related to stream zones and steep slopes.
- Interagency – comprehensive collaboration

Finding 7B

The existing system for determining and obtaining permits in California to reduce fuel loads is often confusing, sometimes redundant, and overly complex. This confusion has resulted in problems in three areas: First, discouraging property owners from creating defensible space. Second imposing unnecessary costs and delays to removing trees for new construction on private property; and third, reducing fuels on urban lots owned by state and federal governments. One way to eliminate confusion, cost, and delays and thereby assist in reducing the risk of catastrophic fire in the Tahoe Basin is to simplify and streamline the permits and, in some instances, eliminate permits required for defensible space and fuel reduction projects on urban lots. In Nevada, the existing permitting system for defensible space work is clear and effective, and has the support of the Nevada Division of Forestry (NDF), North Lake Tahoe Fire Protection District, and Tahoe-Douglas Fire Protection District.

Background and Supporting Evidence:

ISSUE 1: Defensible Space on Non-Federal Lands in California:

The public has expressed confusion regarding what permits they need to create defensible space on their property. At present, there is no permit required from any agency for creating defensible space when cutting trees less than 14 inches diameter at breast height (DBH). Formerly since approximately 1971, the maximum diameter limit for cutting trees without a TRPA permit was 6 inches DBH. Beginning January 27, 2008, TRPA's new policy requires permits only to remove trees greater than 14 inches DBH except within TRPA-designated Shorezone areas. Currently, the TRPA has entered into Memoranda of Understanding (MOU) with six of seven local fire agencies allowing the districts to mark trees and issue permits for defensible space compliance on non-federal land for trees over 14 inches DBH. Unless a landowner wishes to commercialize trees removed from their property (see next three paragraphs regarding CAL FIRE), the TRPA Tree Removal Permit is the only permit required and then only when removing trees over 14 inches DBH.

CAL FIRE does not require a permit to remove trees or vegetation within 100 feet of a structure or to the property line (if less than 100 feet), as long as tree removal is not for a commercial purpose as defined under the Public Resources Code 4527 definition of timber operations. CAL FIRE will continue to train fire agencies on performing PRC 4291 inspections and in the future, will provide additional forestry training for defensible space marking.

Currently California PRC 750-783 regulates the practice of forestry on non-federal forested landscapes to Registered Professional Foresters (RPFs). Landowners are exempted from this when practicing forestry on their own property (PRC 757). In most instances homeowners need professional assistance in understanding and complying with fuel clearance (California PRC 4291), but are not likely to be willing/able to absorb the cost of hiring an RPF. Typically, the landowner's initial point of contact relative to fuel clearance compliance will be with a local government representative or a fire protection agency. Technically, recommendations for removal or retention of trees made by local government or a fire protection agency representative for PRC 4291 purposes could fall under the provisions of the Professional Foresters Law and require an RPF license, which these professionals would not have in most cases.

Current law (California PRC 4527) defines timber operations as the cutting or removal of timber and other solid wood forest products from non-federal timberlands for commercial purposes. Commercial purposes includes the cutting or removal of trees which are processed into logs, lumber, or other wood products that are offered for sale, barter, or trade or the cutting or removal of trees or other forest products during the conversion of timberlands to other uses. The results of this provision are that

homeowners cannot make commercial use of minor forest products to offset project costs without triggering a need for a Timber Harvesting Plan under Article 7 of the Z'berg-Negedley Forest Practice Act or an exemption pursuant to PRC 4584. This places an unneeded permitting burden on the landowner and CAL FIRE.

Recommendation No.1A : As is currently the case in Nevada, the Commission recommends that if non-federal property owners in California are cutting trees larger than 14 inches in diameter at breast height for the purpose of complying with California PRC 4291, they should need only one permit, from either TRPA or their local fire agency.

Impacts of Implementation:

- REQUIRED analysis of impacts on the following factors:
- Cost – reduces landowner costs by eliminating the need for CAL FIRE notices.
- Funding source - none
- Staffing – none
- Existing regulations and/or laws – Assists landowners in complying with PRC 4291. Requires California legislative changes to the Public Resources Code.

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – positive political demonstration of streamlining by public agencies.
- Policy - none
- Health and Safety – assists landowners in protecting their homes from catastrophic wildfire.
- Environmental – assists landowners in reducing the potential for a catastrophic wild fire ignited by a home fire.
- Interagency - none

Recommendation No. 1B: The Commission recommends that the TRPA enter into a Memoranda of Understanding with all local fire agencies in the Tahoe Basin, which will allow the fire agencies to mark trees and issue permits for defensible space, including trees 14 inches DBH and larger between the structure and Lake for all properties having structures within the Tahoe Basin and 6 inches DBH and larger, for TRPA-designated Shorezone properties. Regarding MOU's with Fire Agencies, only the very small and seasonally opened Fallen Leaf Fire Community Services District has not signed an MOU with the TRPA. Given its small size, it is not recommended to the Commission that Fallen Leaf Fire Community Services District sign into an MOU with the TRPA.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduces costs to landowners by removing the \$53.00 TRPA tree permit fee. Reduces costs to TRPA by delegating tree marking to other agencies. Could increase costs to fire agencies due to tree marking demand.
- Funding source - none
- Staffing – may reduce staffing needs for TRPA and may increase staffing needs for fire agencies.
- Existing regulations and/or laws – Assists landowners in complying with PRC 4291.

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – positive political demonstration of streamlining by public agencies.
- Policy - none
- Health and Safety – assists landowners in protecting their homes from catastrophic wildfire.
- Environmental – assists landowners in reducing the potential for a catastrophic wild fire ignited by a home fire.
- Interagency – requires interagency cooperation between TRPA and the fire agencies.

Recommendation No. 1C: The Commission recommends that CAL FIRE, Nevada Division of Forestry, TRPA, and the Fire Agencies work together to create a defensible space based tree marking program and further recommends that CAL FIRE and NDF include this program in its annual PRC4291 training to all Fire Agencies in the Tahoe Basin within their respective states to ensure that tree marking for California Public resources code 4291 purposes is conducted consistently in the Tahoe Basin. The Nevada Fire Agencies should consider adopting or incorporating PRC4291 or similar defensible space requirements.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – none
- Funding source - none
- Staffing – none
- Existing regulations and/or laws – Improves consistency of fire laws between states.

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – none

- Policy – adoption of PRC 4291 by TRPA and Nevada fire agencies.
- Health and Safety – creates consistent defensible space laws throughout the Tahoe Basin.
- Environmental –none

Interagency – fosters interagency cooperation and coordination.

Recommendation No. 1D: The Commission recommends that TRPA, the Nevada Fire Safe Council, the University of Nevada Cooperative Extension, and the Fire Agencies increase their outreach efforts to inform private property owners about what permits are needed to reduce fuel loads. This will include developing a consistent message to the public about how to create defensible space in ways that control erosion. The Commission further recommends a single point of contact 1-800-number be developed that property owners can call for information. In addition, the Commission recommends all materials contain a consistent message on how to create defensible space, whether they are created by TRPA, the Nevada Fire Safe Council, and the Fire Agencies, the University of Nevada Cooperative Extension or agencies involved in erosion control.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – could incur costs to agencies for staffing, educational materials and phone line.
- Funding source – not known
- Staffing – could require additional staff for outreach and education.
- Existing regulations and/or laws – Increased public knowledge, understanding and compliance with fire laws.

OPTIONAL analysis of impacts:

- Operational – none
- Social – improves social acceptance of forest health and fire prevention principles.
- Political – positive example of a consistent message across a wide political spectrum.
- Policy – none
- Health and Safety – creates consistent message that encourages compliance with defensible space laws and the prevention of catastrophic wildfire.
- Environmental – creates consistent message that encourages compliance with defensible space laws and the prevention of catastrophic wildfire while protecting soils and water quality.
- Interagency – demonstrates interagency support for forest health and fire prevention.

Recommendation #1E: Amend California PRC 757 to provide an exemption from requiring a Registered Professional Forester for local government or fire protection agencies who give advice to landowners for the purposes of complying with PRC 4291.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost - none
- Funding source - none
- Staffing – eliminates the need for registered professional forester oversight of PRC 4291 tree marking.
- Existing regulations and/or laws – PRC 757.

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – none
- Policy – clarifies California Forester’s Licensing Law related to PRC 4291.
- Health and Safety – improves the ability for local government and fire protection agencies to provide advice regarding PRC 4291.
- Environmental – improves the ability for local government and fire protection agencies to provide advice regarding PRC 4291.
- Interagency – clarifies California Forester’s Licensing Law for Tahoe Basin agencies.

Recommendation No. 1F: The Commission recommends that the California legislature take action, such as amending California PRC 4527 Timber Operations or/and PRC 4526 Timberland, so as to eliminate the need for CAL FIRE to require a notice of exemption to remove trees for commercial purposes when removing trees in order to comply with California PRC 4291 within the Lake Tahoe Basin.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduces costs to landowners and CAL FIRE by reducing paperwork requirements.
- Funding source – none
- Staffing – reduces CAL FIRE staff time spent on processing paperwork and conducting completion inspections.
- Existing regulations and/or laws – Simplifies Title 14, CCR 1038 and 1104.1 of the California Forest Practice Rules.

OPTIONAL analysis of impacts:

- Operational – none
- Social – Unknown
- Political – positive demonstration of streamlining by a regulatory agency.
- Policy – may require a Legislative change in the California Board of Forestry definition of “timberland”.
- Health and Safety – reduces paperwork for commercial defensible space projects that protect structures from catastrophic wildfires.
- Environmental – reduces paperwork for defensible space projects that protect structures from catastrophic wildfires Interagency – reduces confusion by eliminating duplication between agencies, and retains TRPA as environmental oversight.

FINDING: New Construction on Undeveloped Land: The situation with new residential and commercial construction on undeveloped land in California is more complicated than that of defensible space. Currently, permits must be obtained from TRPA, CAL FIRE, and the Lahontan RWQCB under differing circumstances.

The TRPA authorizes new construction on non-federal undeveloped lots under its current Regional Plan and addresses requirements for tree removal for construction purposes under TRPA permit or under the County building permit through an MOU with each county. Under the current TRPA Regional Plan, new construction must be within a fixed urban boundary and new land subdivisions are prohibited.

CAL FIRE is required by California law to issue permits for conversions of Timberland to a non-timber growing use, such as residential or commercial construction, on non-federal lands only (except State Parks land). To eliminate CAL FIRE's permitting process, legislative approval is needed to amend the PRC 4526 definition of timberland in the Lake Tahoe Basin, so as to exempt parcels less than 3 acres in size. If this legislative proposal were approved, landowners would no longer be required to file a Less Than 3 Acre Conversion Exemption with CAL FIRE since the Department does not regulate non-timberland.

Lahontan does require permits or waivers for tree removal for new residential or commercial construction on undeveloped land, but in practice the scale of such development in the Tahoe Basin will fall below the threshold of Lahontan's concern. Lahontan's policy is to review these projects primarily when the development is a new subdivision, not a single-family home. In addition, Lahontan has a MOU with the TRPA for residential construction which gives the TRPA approval to act as Lahontan's agent regarding these types of projects. Confusion arises because this MOU does not clearly state that it addresses tree removal.

Recommendation No. 2A: The Commission recommends that the Lahontan Regional Water Quality Control Board Executive Officer issue a letter clarifying that its existing MOU with TRPA for residential construction constitutes a waiver of waste discharge requirements for new residential construction, including tree and vegetation removal, therefore eliminating the need for a permit from the Lahontan Regional Water Quality Control Board.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – none
- Funding source – none
- Staffing – none
- Existing regulations and/or laws – clarification of existing MOU

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – none
- Policy – none
- Health and Safety – none
- Environmental –reduces paperwork for defensible space projects that protect structures from catastrophic wildfire Interagency-reduces confusion by eliminating duplication between agencies, and retains TRPA as environmental oversight.
- Interagency – improves interagency understanding of existing agreements.

Recommendation No.2B: The Commission recommends that the California Legislature take action, such as amending PRC4527 Timber Operations or/and PRC4526 Timberland, so as to eliminate the need for CAL FIRE to require a notice of exemption within the Lake Tahoe Basin to remove trees for new construction on non-Federal parcels less than 3 acres in size (14 CCR 1104.1), and instead defer to TRPA ordinance.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduces costs to landowners and CAL FIRE by reducing paperwork requirements.
- Funding source – none
- Staffing – reduces CAL FIRE staff time spent on processing paperwork and conducting completion inspections.
- Existing regulations and/or laws – Simplifies Title 14, CCR 1038 and 1104.1 of the California Forest Practice Rules.

OPTIONAL analysis of impacts:

- Operational – none
- Social – The Sierra Club voiced objections to this proposal to the 2006 Board of Forestry and Fire Protection during discussed changes to the Forest Practice Act, Rules and Regulation pertaining to the Lake Tahoe Region. The Sierra Club was concerned that this proposal would be applied to the rest of the state as well.

- Political – positive demonstration of streamlining by a regulatory agency.
- Policy – may require a Legislative change in the California Board of Forestry definition of “timberland”.
- Health and Safety – reduces paperwork for commercial defensible space projects that protect structures from catastrophic wildfires.
- Environmental – reduces paperwork for defensible space projects that protect structures from catastrophic wildfires, and retains TRPA as environmental oversight.
- Interagency – reduces confusion by eliminating duplication between agencies.

FINDING: Undeveloped Urban Lots Owned by California State or Federal Governments:

A third area of concern pertains to permits required to reduce fuel loads on urban lots owned by the federal government or California State government. Currently for California government lots, the Lahontan Regional Water Quality Control Board requires proponents of all fuel reduction projects, including hand thinning, to apply for a timber waiver that includes a project description. When the project is of a larger scale with potential to affect water quality, Lahontan Regional Water Quality Control Board also requires project proponents to submit an inspection plan.

For federal urban lots, the USDA Forest Service (USFS) applies to the Lahontan RWQCB to conduct fuel reduction work under the Lahontan Regional Water Quality Control Board Timber Waiver. According to the USFS, this is a relatively intensive process. At present, hand crew work conducted on federal lands, including within SEZs, are included in category 1b of the Lahontan Regional Water Quality Control Board Timber Waiver. More intensive treatments in SEZs, steep slopes, and/or mechanical treatments are not allowed under Category 1b and therefore require detailed project descriptions and an inspection plan. This in some situations deters or modifies treatment applications to avoid the increased work required to meet the requirements of other Timber Waiver Categories.

The California Dept. of Forestry and Fire Protection (CAL FIRE) as Lead Agency for environmental review regarding commercial timber harvesting in California on non-federal lands, is responsible for ensuring the California Forest Practice Act is met. CAL FIRE and the statutory Interdisciplinary Review Team, including the TRPA and the Lahontan Regional Water Quality Control Board, depend upon office and field review of timber harvesting documents to ensure water quality, aquatic resources, and all other are natural resources are protected.

Current law (PRC 4527) defines timber operations as the cutting or removal of timber and other solid wood forest products from non-federal timberlands for commercial purposes. Commercial purposes includes the cutting or removal of trees which are processed into logs, lumber, or other wood products that are offered for sale, barter, or trade or the cutting or removal of trees or other forest products during the conversion of timberlands to other uses. The results of this provision are that landowners cannot make commercial use of minor forest products to offset project costs without triggering a need for a Timber Harvesting Plan under Article 7 of the Z’Berg-Negedley Forest Practice Act or an exemption pursuant to California PRC 4584. This places an unneeded permitting burden on the landowner and the Department.

The TRPA has MOUs or other agreements with the California Tahoe Conservancy, California Department of Parks and Recreation, and the U.S. Forest Service that allows these three land

management agencies to manage fuels, including removing trees, on their urban lots under specific circumstances and conditions. The United States Forest Service and the TRPA are currently updating and revising their MOU to ensure fuel treatments on urban lots are exempt from the TRPA Permit requirement.

Recommendation No. 3A: The Commission recommends that the Lahontan Regional Water Quality Control Board expand Category 1A of its timber waiver to include urban lots, including lots containing SEZs, owned by Federal, California State or local governments within the Lake Tahoe Basin. This will eliminate the need for these land management agencies to notify or pay a fee to Lahontan to reduce fuel loads on such lots.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduces costs to federal and state agencies by reducing paperwork requirements.
- Funding source – none
- Staffing – reduces staff time presently used for filing paperwork.
- Existing regulations and/or laws – simplifies Lahontan Regional Water Quality Control Board (RWQCB) Timber Waiver Application requirements.

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – positive demonstration of streamlining by a regulatory agency.
- Policy – none
- Health and Safety – reduces paperwork for fuel reduction projects that protect structures from catastrophic wildfires. Fuel reduction projects could be more extensive and potentially more effective if a wider range of treatment options were allowed under Category 1a.
- Environmental – reduces paperwork for fuel reduction projects that reduce the potential for catastrophic wildfires.
- Interagency – improves interagency cooperation between the Lahontan RWQCB, state and federal agencies.

Recommendation No 3B. : The Commission recommends that the TRPA expand or adopt MOU's with Public Land Managers to exempt tree and vegetation removal from publicly owned urban lots.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduces costs to the Public Land Managers by reducing paperwork requirements.

- Funding source – none
- Staffing – reduces staff time presently used for filing paperwork.
- Existing regulations and/or laws – none

OPTIONAL analysis of impacts:

- Operational – none
- Social – none
- Political – positive demonstration of streamlining by a regulatory agency.
- Policy – none
- Health and Safety – reduces paperwork for fuel reduction projects that protect structures from catastrophic wildfires.
- Environmental – reduces paperwork for fuel reduction projects that reduce the potential for catastrophic wildfires.
- Interagency – improves interagency cooperation between the TRPA and the Public Land Managers.

Recommendation No.3C : The Commission recommends that the California legislature take actions, relative to the Lake Tahoe Basin, such as amending PRC4527 Timber operations or/and or California PRC 4526 Timeberland, so as to no longer require projects on parcels than 3 acres in size that would require a notice of Exemption for Harvesting Christmas Trees, (14CCR 1038 (a), Less than 10% Average Volume of Dead Dying or Diseased Trees (14CCR 1038 (b)), compliance with PRC4290and 4291 (14CCR 1038 (c)) and the Tahoe Exemption (14CCr 1038 (f) from Forest Practice Act filing requirements within the Lake Tahoe Basin and instead refer to TRPA ordinance.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduces costs to landowners and CAL FIRE by reducing paperwork requirements.
- Funding source – none
- Staffing – reduces CAL FIRE staff time spent on processing paperwork and conducting completion inspections.
- Existing regulations and/or laws – Simplifies Title 14, CCR 1038 and 1104.1 of the California Forest Practice Rules.

OPTIONAL analysis of impacts:

- Operational – none
- Social – The Sierra Club voiced objections to this proposal to the 2006 Board of Forestry and

Fire Protection during discussed changes to the Forest Practice Act, Rules and Regulation pertaining to the Lake Tahoe Region. The Sierra Club was concerned that this proposal would be applied to the rest of the state as well.

- Political – positive demonstration of streamlining by a regulatory agency.
- Policy – may require a Legislative change in the California Board of Forestry definition of “timberland”.
- Health and Safety – reduces paperwork for commercial defensible space projects that protect structures from catastrophic wildfires.
- Environmental – reduces paperwork for defensible space projects that protect structures from catastrophic wildfires, and retains TRPA as environmental oversight.
- Interagency – reduces confusion by eliminating duplication between agencies



Christy Daugherty

Untreated parcel in stream environment zone

Finding 8

Although TRPA ordinances and standards have been adopted in accordance with TRPA environmental documentation standards, they have generally not been adopted with a view towards the mitigation of catastrophic fire hazards. As a result, a number of requirements and standards have been imposed by the TRPA within the Tahoe Basin for the purpose of achieving Environmental Threshold Carrying Capacities, but without sufficient, if any, consideration given to mitigation of hazards that may contribute to catastrophic fires.

Background and Supporting Evidence:

The Tahoe Regional Planning Compact, while specifying that the TRPA shall determine environmental threshold carrying capacities necessary to maintain public health and safety within the region (see, TRPA Compact Art. V(b); Art. II(i)), the TRPA has not expressly considered fire safety matters when adopting many of its ordinances and standards.

The Tahoe Basin Fire Chiefs for the seven fire protection districts/departments in the Tahoe Basin have identified a number of restrictions and impediments within the ordinances and procedures of the TRPA that add to the risks of catastrophic fire, thereby increasing the hazards of such fires to the communities located within the Basin, and to the residents of the Basin. In a letter to the Commission dated September 18, 2007, the Fire Chiefs recommended the following changes to the TRPA Code of Ordinances and various standards:

1. Removal of all restrictions requiring prior approval to remove trees within 100 feet of structures to allow property owners to meet the standards of PRC 4291; the grant of authority by the TRPA to Tahoe Basin Fire Agencies to authorize such tree removals in compliance with PRC 4291 and TRPA's modified ordinance, and without requiring approval or confirmation by a licensed forester.
2. Elimination of coverage requirements with regard to the construction or expansion of ingress/egress roads required for emergency access.
3. Acceptance of a 5 feet wide noncombustible "moat" around all structures and providing that the use of rock, gravel, brick, or pervious concrete in such areas shall not constitute a coverage increase.
4. Acceptance of the removal by property owners of all flammable material, vegetation, or other combustibles (specifically including pine needles and wood mulch) around structures for an area up to 30 feet.
5. Acceptance of 100 feet of defensible space around any structure regardless of ownership.
6. Acceptance of up to 300 feet of defensible space around any structure on sloped properties.
7. Acceptance of the removal of native shrubs and trees under the drip-line of any tree or below any deck or overhang.
8. Agreement by TRPA that the enforcement of building standards and defensible space requirements are solely the responsibility of the local fire agencies.
9. Agreement by TRPA that the fire safety standards of PRC 4291 to be followed within the Basin supersede and have priority over any conflicting BMPs mandated by TRPA code or ordinances.

The TRPA's staff has advised the Commission that that the TRPA has met with the Fire Chiefs and have

addressed most of their recommendations. As to item 1 above, the TRPA Governing Board has recently taken action to allow trees of up to 14" in diameter to be removed by homeowners for defensible space purposes. As to item 2, the TRPA points out that it has always allowed property owners to allow for turnarounds and driveway modifications, provided the property owner provided sufficient coverage for such areas. The TRPA is now consulting with the fire agencies regarding emergency ingress/egress matters when new plans are submitted. However, there are many existing roadways and driveways in the Basin that do not meet the current requirements for emergency ingress/egress.

As to item 3, the TRPA reports that it has no objections to the 5 feet wide noncombustible "moat" concept and that no new changes are necessary. As to item 4, this Commission is considering, with TRPA input, other Findings and Recommendations that specifically address acceptable defensible space practices. Similarly, the TRPA reports that as to items 5 and 6, these defensible space practices are acceptable to the TRPA and are already addressed in TRPA code and practice. However, TRPA reports that existing MOUs with the fire agencies may have to be modified with regard to such matters.

As to items 7 and 8, TRPA reports that these matters are not subject to TRPA code and practices and therefore not of concern to the TRPA. However, with regard to item 9, the TRPA reports that it and the Fire Chiefs are close to resolution of the conflicts between BMPs and PRC Code Sec. 4291, and that if code changes are necessary, they will be presented to the TRPA Governing Board for approval.

Recommendations:

1. All TRPA ordinances and procedures, whether presently existing or as may be proposed in the future, that affect forest health issues and public safety from catastrophic fire should be reviewed in a cooperative, collaborative manner by the TRPA and qualified professionals with experience in fire prevention and fighting catastrophic fires to assure that said ordinances and procedures do not pose undue risks of catastrophic fire or create conditions that may increase the risk of such fires to communities within the Basin or which may otherwise endanger public safety, and to thereafter be amended or modified by the TRPA if necessary to facilitate the mitigation of undue fire hazards.

2. That with regard to the remaining issues to be resolved between the Fire Chiefs and the TRPA, The Governors of California and Nevada should request the Governing Board of the TRPA to take the following actions no later than June 1, 2008:

a. With reference to item 2 of the Fire Chiefs' recommendations, the Governing Board should commence formulation of suitable modifications to its ordinances and requirements to permit the widening or enlargement of roadways and driveways in order to improve reasonable emergency access by the fire agencies without requiring property owners to have to provide additional coverage for such public safety improvements;

b. With reference to item 6 of the Fire Chiefs' recommendations, the Governing Board and the respective fire agencies should complete and have in place amended MOUs regarding the matters addressed in the Fire Chiefs' letter; and

c. With reference to item 9 of the Fire Chiefs' letter, the Governing Board should take actions to reconcile all existing BMP requirements with the requirements of Cal. PRC Sec. 4291.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost / It will be necessary for the review of TRPA ordinances and procedures to be funded by either the TRPA, the Fire Chiefs, or by a group such as a Fire Safe Council. To the extent TRPA staff is used to participate in such a review, its budget will require supplementation. The costs of such a review are unknown at this time, and would need to be developed. The other actions recommended in this F&R (i.e. the costs of amending the MOUs with the fire agencies and modification of its ordinances with regard to enhancing emergency ingress/egress to properties), should be able to be completed within existing budgets.
- Funding source / to the extent additional funding for forest fuel reductions and fire prevention matters must be addressed by the TRPA, it will be necessary for the TRPA to expeditiously formulate a budget request and submit it to the States of Nevada and California for funding. Similarly, it will require the States to expeditiously respond to such budget request.
- Staffing / To be determined.
- Existing regulations and/or laws / Modifications to some existing TRPA ordinances or procedures may be necessary.



US Forest Service

Home burning in Angora Fire, June 2007

Finding 9

There is presently no requirement for experienced fire professionals and forest health experts to be represented on either the Governing Board or the Advisory Planning Commission of the TRPA. Participation by such experts in TRPA matters affecting forest health and public safety would help make the TRPA more responsive to the prevention of catastrophic fires resulting from poor forest health within the Basin and the risks posed thereby to public safety, and would help assure continued attention to these matters by the TRPA.

Background and Supporting Evidence:

It is widely believed by many residents and property owners within the Tahoe Basin that the TRPA has not considered or has refused to adequately consider and address the risks of catastrophic fires to people, property, and the forests within the Basin and has, in fact, adopted ordinances and procedures that exacerbate the risks of catastrophic fire within the Basin.

The bi-state Tahoe Regional Planning Compact (“Compact”) defines the composition of the Governing Board of the TRPA and of the TRPA’s Advisory Planning Commission, and sets forth the qualifications of such members. However, the Compact fails to require experienced fire professionals and forest health experts to serve on either the Governing Board or the TRPA’s Advisory Planning Commission (“APC”). The presence of such individuals on both bodies would help insure that forest health and fire safety issues remain at the forefront of the TRPA’s agenda. However, the Compact would require amendment in order to add additional members to the TRPA Governing Board, a time consuming and potentially uncertain process.

Presently, the Compact provides for 15 members of TRPA’s Governing Board, of which 7 represent various California constituencies, 7 represent various Nevada constituencies, and 1 is an Appointee of the President of the United States. 1980 Compact, Art. III(a). Pursuant to the 1980 version of the Compact, 12 of the 15 members of the Governing Board serve at the pleasure of their respective appointing authorities. As to the California delegation, 2 of the members are appointed by the Governor of California. As to the Nevada delegation, 1 of the members is appointed by the Governor of Nevada. The remaining 9 members of the Governing Board who serve at the pleasure of their respective appointing authorities include representatives of the five counties that are located within the Basin (Placer, El Dorado, Washoe, Carson City, and Douglas), a representative of the City of South Lake Tahoe, and representatives of various other constituencies. The qualifications and experience for all of the foregoing described members are not defined in the Compact and could, presumably, include persons who are experienced in fire prevention and protection matters and forest health and restoration matters. Although the local government entities having authority to appoint members to the Governing board may appoint members of their respective elective boards to the positions on the TRPA Governing Board, they are not required to do so. Therefore, authority presently exists for any of these appointing authorities to appoint experienced fire professionals and/or forest health and restoration experts to the Governing Board.

Although no additional members of the Governing Board of the TRPA can be appointed by the respective appointing authorities, the Compact is silent as to the appointment of advisory, ex-officio non-voting advisors to the Governing Board. Therefore, it is believed that the Governing Board of the TRPA could invite qualified persons to serve in advisory roles as non-voting, ex-officio members of the Governing Board and that qualified fire professionals and forest health experts could be utilized in these roles in order to bring their important perspectives to the Governing Board.

With respect to the APC, the provisions of Article III(h) of the Compact provide that the APC shall have a minimum of 15 members. The Compact does not prescribe the actual number of members the APC may have as evidenced by the fact that the APC presently has 19 members. Moreover, the Compact provides

that “at least four lay members with an equal number from each State. . .” shall be appointed by the TRPA Governing Board to the APC (emphasis added). Therefore, it appears that the composition of the APC may be supplemented by the TRPA Governing Board from time to time to meet specific needs such as expressly adding expertise in forest health/restoration and fire matters.

The TRPA Governing Board also has express authority under the Compact “...employ such other staff . . . as may be necessary to execute the powers and functions provided for under this compact or in accordance with any intergovernmental compacts or agreements the agency may be responsible for administering.” 1980 Compact, Article IV(a). Thus, the TRPA itself has authority to employ fire professionals and forest health experts, if it so chooses.

Further, the TRPA Governing Board has, on its own action since the occurrence of the Angora Fire, created a special committee composed of 8 of its members to serve as a “Catastrophic Wildfire Prevention Committee”. There appears to be no impediment under the Compact to the appointment of qualified fire professionals and forest health experts to this Committee in order to bring these important perspectives to the TRPA’s Governing Board.

Based on the foregoing, there presently are means to bring the important perspectives of experienced fire professionals and forest health experts to the TRPA without having to open the Compact to amendment.

Recommendation(s)

Recommendation 1. It is recommended that the Governors of the States of California and Nevada take the following actions in order to bring the perspectives of experienced fire professionals and experts in forest health to the TRPA:

(A) Utilize their respective powers of appointment under the Compact to appoint experienced fire professionals and forest health restoration experts to the TRPA Governing Board, or work with and encourage the other authorities having powers of appointment under the Compact to appoint experienced fire professionals and forest health and restoration experts to the TRPA Governing Board; or

(B) Request the Governing Board of the TRPA to invite qualified fire professionals and forest health/restoration experts to serve as advisors to the Governing Board as ex-officio, non-voting members of the Governing Board.

Recommendation 2. The Governors of the States of California and Nevada should request the TRPA Governing Board to immediately appoint additional members to the APC, consisting of an experienced fire professional and an experienced forest health/restoration expert from each State, and to direct the APC to monitor and advise the Governing Board on any matters relevant to fire safety issues and forest health and restoration efforts in the Tahoe Basin.

Recommendation 3. The Governors of the States of California and Nevada should request the TRPA Governing Board to expand the membership of its Catastrophic Wildfire Prevention Committee to include representation by experienced fire professionals and forest health/restoration experts.

Recommendation 4. The Governors of the States of California and Nevada should request the TRPA Governing Board to add experienced fire professional and forest health experts to its staff whose duties would include liaison with the fire fighting authorities within the Basin, assistance in the coordination and implementation of the 10-Year Plan developed as part of the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10– Year Plan*, and assistance with

such other forest restoration and fire safety activities and projects as may be appropriate.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost – There would be no additional costs if any of the appointing authorities exercised their appointing discretion to appoint qualified professionals to the Governing Board. Similarly, the expense of adding two additional members, whether as voting or ex-officio non-voting members to the Governing Board, would be minimal, as Board Members serve without compensation. The addition of fire and forest health experts to the APC would similarly result in only minimal additional costs.
- Funding source – TRPA Budget
- Staffing – At least two additional staffing positions would be added to the TRPA.
- Existing regulations and/or laws – The recommendations would require no changes to existing laws or regulations.



US Forest Service

Heavy fuel load in stream environment zone

Finding 10

There are needs to improve communications between the Tahoe Regional Planning Agency (TRPA) and the States of California and Nevada and to provide enhanced oversight by the two states. These steps are necessary in order to assure that the recommendations of the California Nevada Tahoe Basin Fire Commission (“Fire Commission”) are followed up on, the 10-Year Plan of the *Lake Tahoe Basin Multi-Jurisdictional Fire Reduction and Wildfire Prevention Strategy 10-Year Plan* is fully implemented, and the Community Wildfire Prevention Plans relevant to Tahoe Basin communities are implemented without unreasonable regulatory interference. Additionally, there are a number of other components of the Tahoe Basin regional plan that directly or indirectly relate to important forest health and public safety issues relevant to the potential for catastrophic fire within the Basin that need to be implemented as expeditiously as possible. Accordingly, means should be devised to facilitate regular reports by the TRPA to the Governors and Legislatures of both States, and to the Congressional delegations of the two states, regarding such matters and to provide for greater oversight by the two States of the TRPA’s activities relating to such matters.

Background and Supporting Evidence:

One of the lessons of the disastrous Angora Fire is that there is a need to provide oversight and coordination over the efforts of all of the numerous agencies having jurisdiction in the Basin regarding issues relating to fire protection, public safety, and environmental matters. This is especially true with regard to the question of how regulatory requirements relating to environmental matters may unreasonably affect or impede public health and safety within the Basin. It has been stated in the hearings of the Fire Commission by various parties that the Fire Commission has provided long needed “adult supervision” over the various agencies in the Basin and their inter-agency efforts regarding fire safety issues. In this vein, the Fire Commission has provided a necessary review and oversight process that is needed in order to address the serious hazards posed by catastrophic fire to the Tahoe Basin.

However, even prior to the disastrous Angora Fire, the various public entities involved in such matters have, in fact, worked together to develop a 10 year plan to implement in the Basin a well thought out and badly needed *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*. Their efforts in this regard are to be applauded. All of the fire departments and fire protection districts that serve the Basin have long recognized the risks of catastrophic fire to the Basin, and the public agencies having jurisdiction over environmental matters in the Basin have acknowledged that the risks of catastrophic fire pose severe environmental risks to the Basin and the Lake. Unfortunately, it took the Angora Fire to underscore the seriousness of the issue with some of the public agencies. All of the involved agencies have since expressed their intent and willingness to continue their cooperative efforts to implement the “10- Year Plan” and, in many important and significant ways, have already started the process to do so.

The TRPA is unique among the various agencies that participated in the creation of the “10-Year Plan” because it is the only agency that has authority throughout the entire Tahoe Basin. The express authorities and responsibilities of the TRPA under the Compact to prescribe standards relating to numerous matters such as “water purity and clarity,” “tree removal,” “soil and sedimentation control,” and “watershed protection” all relate, whether directly or tangentially, to forest health and fire prevention. Further, the TRPA Governing Board has express authority under the Compact to promulgate and implement programs (a) to protect life and property and/or public safety, and (b) forest preservation and restoration plans.

The following authority is expressly set forth in the Compact to the States of California and Nevada:

“The Tahoe Regional Planning Agency shall have such additional powers and duties as may hereafter be delegated or imposed upon it from time to time by the action of the Legislature of either state concurred in by the Legislature of the other.”

1980 Compact, Art. X(b).

While the authority to impose extra powers on the TRPA requires the prior consent of Congress pursuant to Section 4 of public Law 96-551, it would appear that the States of Nevada and California may, by action of the Legislature of either State concurred in by the Legislature of the other, impose additional duties upon the TRPA without the prior consent of Congress. The TRPA, as the only agency having jurisdiction over all lands within the Basin, whether owned by governmental agencies or by private parties, is uniquely positioned to monitor fuel reduction projects and forest health and restoration projects undertaken within the Basin. Therefore, the TRPA should be able to easily serve as a central source of coordinating Basin agencies' activities and the collection of information regarding the implementation of fuel reduction projects, forest health and restoration projects, and fire safety procedures throughout the Basin.

In addition to imposing further reporting obligations to the two States, there is a need to provide effective oversight of TRPA activities including, in particular, its efforts to assure public safety within the Basin, the protection of the Basin's forests, and the preservation of other natural resources that face the hazards of catastrophic fire. However, as a unique creation of the two states and the federal government, the oversight of the TRPA's activities by the three governments that created it has not been as effective as it could and should be.

Recommendation(s)

Recommendation 1: It is recommended that the Governors of the States of California and Nevada request their respective Legislatures to impose duties upon the TRPA to report to the Governors and Legislatures of each State, and to the Congressional delegations of each State, no less than yearly regarding (i) the status of the implementation of the “10-Year Plan”, (ii) the status of fuel reduction efforts and forest restoration efforts within the Tahoe Basin, (iii) the status of remedial vegetation management efforts in areas within the Basin that have suffered catastrophic fires such as the area affected by the Angora Fire, (iv) the TRPA's compliance with the TRPA's “Regional Plan for the Lake Tahoe Basin: Goals and Policies” insofar as they relate to natural hazards and precautionary measures taken to minimize impacts of fire hazards (see, Goals Document at II-25), (v) the TRPA's implementation of programs to increase public awareness of fire safety issues, the manipulation of vegetation to reduce fire hazards, and fire prevention techniques (See, Goals Document, at II 25-26), (vi) the TRPA's efforts to cooperate with the US Forest Service and other public landowners, private landowners, and local fire departments and fire protection districts to accomplish fire hazard reduction projects, and (vii) the TRPA's compliance with or failure to comply with any fire prevention or public safety recommendations made by such fire departments and fire protection districts.

Recommendation 2: Until the Legislatures of the States of California and Nevada collectively adopt legislation imposing such duties on the TRPA, it is recommended that the Governors of the States of California and Nevada (i) continue the duties and responsibilities of the California Nevada Tahoe Basin Fire Commission to continue oversight of such matters, and (ii) request the TRPA Governing Board to voluntarily undertake such reporting duties to provide to the Governors and their designated representatives with the information identified in the foregoing recommendation.

Recommendation 3: It is further recommended that the Governors of the States of California and Nevada request their respective State Legislatures to utilize their budget review processes over the budgets of the respective States relating to the TRPA to exercise active and aggressive oversight of the TRPA's activities with regard to the implementation of the recommendations of the California Nevada Tahoe Basin Fire Commission, fuel reductions programs within the Tahoe Basin, forest health and restoration efforts within the Basin, and fire safety recommendations made by the fire departments and fire protection districts located within the Basin.

Recommendation 4: It is recommended that the Governors of the States of California and Nevada request the TRPA to submit a supplemental budget request to the two States addressing the additional costs, if any, anticipated to be incurred by the TRPA in meeting any additional duties imposed upon it by the two States pursuant to these recommendations, and that the Governors request the Legislatures of their respective States to fund reasonable supplemental budget requests for such purposes.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost/ The costs of assembling relevant information for the preparation of such reports is unknown, but not believed to be greatly material. Current staff of the TRPA should be able to assemble and prepare such reports.
- Funding source/ TRPA budget.
- Staffing/ To be determined.
- Existing regulations and/or laws/ The formal adoption of additional reporting responsibilities of the TRPA will require the Legislatures of both states to take action. Voluntary implementation of such reporting requirements in the interim period until such duties are formally imposed can be done without changes to any present regulations or laws.

Finding 11

The Memorandum of Understanding (MOU) between the USDA Forest Service (FS) and the Tahoe Regional Planning Agency (TRPA) creates unnecessary and unintended barriers to efficient planning and accomplishment of fuels management projects. Likewise the MOU between the FS and Lahontan Regional Water Quality Control Board (LRWQCB), while more recent than the TRPA MOU, may have sections that inadvertently impair efficient implementation of fuel reduction projects.

Background:

The MOU between the FS and TRPA was signed almost 20 years ago in 1989 and is out of date. The sections dealing with fuel reduction and the necessary associated activities, such as roads, do not reflect contemporary technologies and practices, especially considering the current aggressive goals and objectives to reduce the fuel loading within the Lake Tahoe Basin. At the time the MOU was signed, fuel reduction projects were modest in size and scope. The MOU focused more on other types of projects that were of greater concern, such as salvage logging resulting from extensive bug kill. In the past few years awareness of the threat of catastrophic wildfire in the wildland urban intermix has increased tremendously resulting in a better understanding of the need for aggressive fuel reduction projects. Concurrently, funding from sources such as SNPLMA have become available to accomplish intensive multifaceted large scale fuels management projects. Consequently the scope of fuels projects currently envisioned is not covered appropriately in the MOU.

The MOU between the USFS and the LRWQCB, while only a few years old, also does not address the nature of fuel reduction projects in light of current practices and emerging innovative technologies.

Impacts:

- Fiscal – Reduced costs to agencies. FS cost and time to plan projects should be reduced and the TRPA and the LRWQCB time in review and approval should be reduced
- Operational - None
- Legal – Revised MOUs would be compliant with each agencies regulations
- Labor - None
- Social - None
- Political – Positive demonstration of agencies working together to streamline processes and focus on results rather than process.
- Policy – None, revisions to MOU's would still be compliant with the regulations and policies of each agency.
- Health and safety – Less processing, planning time and cost mean more acres can be treated.
- Environmental - none
- Interagency – Clear roles and responsibilities described in updated MOUs will foster interagency cooperation and reduce conflicts arising from misunderstandings arising from unclear direction.

Recommendation(s)

1. The Commission recommends that the USDA Forest Service and the TRPA work cooperatively to revise their MOU with focus on exempting fuel reduction projects and associated supporting activities from TRPA review and permit.
2. The Commission recommends that the USDA Forest Service and the LRWQCB review their MOU and revise any stipulations that impede project planning and implementation related to fuels projects and associated supporting activities.



Untreated fuels in stream environment zone

Finding 12

Compared to the permitting process for fuel reduction projects in Nevada, projects in California are subject to an additional layer of permitting requirements by the Lahontan Regional Water Quality Control Board (LRWQCB). This added regulatory layer has resulted in project delay, increased costs for permitting and project implementation, deletion of critical components from projects, and reduced project scope due to its imposed increased costs. There is a need to create greater consistency in permitting requirements in the Tahoe Basin so that priority projects for fuel reduction projects in areas subject to fire hazards will be undertaken according to relative need, rather than relative ease of permitting.

As a result of the additional layer of permitting requirements imposed by the LRWQCB, land managers and private property owners seeking to mitigate fire hazards in stream environment zones and steep slope areas are reluctant and, in many cases unwilling, to undertake fuel reduction projects in such areas. Further, delays and uncertainties in the LRWQCB permitting process pose difficulties to land managers in holding together funding grants for such projects.

Background and Supporting Evidence

When the TRPA was created, the prevention of catastrophic fire was not considered and the impacts of catastrophic fire on the environment of the Tahoe Basin and the Lake were not addressed. Since then, forest fuels build-ups in the Basin have occurred as the result of unintended consequences of the TRPA's and the LRWQCB's efforts to curb erosion by preventing the removal of forest fuels (especially in stream environment zones and on steep slope), and the efficiency of the fire agencies in keeping fires in the Basin under control. Circumstances have changed, and now the threat of catastrophic fires poses hazards to the Lake's water quality and clarity never imagined by the creators of the Tahoe Regional Planning Compact.

Recognizing these changed circumstances, the TRPA Governing Board took action in 2002 to declare that the prevention of catastrophic fires within the Basin its' "Number One Priority". In response to the Angora Fire in June 2007, the TRPA Board created a "Catastrophic Wildfire Prevention Committee" to address forest health and fuel reduction issues. In addition, proposals have been made to this Commission to recommend revisions or supplements to the TRPA Governing Board's composition and its responsibilities in order to permanently enhance the TRPA's attention to this important issue.

While the LRWQCB has made efforts to facilitate fuel reduction projects in stream environment zones and steep slope areas, substantial disparities remain between the permitting processes followed in California and Nevada, and such disparities have generally increased in recent years as the LRWQCB requirements have made fuel reduction projects in the California portion of the Tahoe Basin more expensive, more time consuming, and less certain. These disparities arise from the application by the LRWQCB of subjective, if not arbitrary, standards to such projects and the LRWQCB's lack of the multi-disciplinary capabilities necessary to assess such projects that are presently available within the TRPA. Because of the foregoing, the TRPA is better prepared to exercise this authority. The TRPA is a multi-disciplinary agency that is capable of considering all the impacts of such proposed projects and, as a bi-state regional authority, the TRPA can apply its authority in regard to such matters uniformly in both States.

Recommendations

1. It is recommended that the Governor of the State of California direct, within the framework of his legal authority, the Lahontan Regional Water Quality Control Board (LRWQCB) to transfer to the TRPA no later than October 1, 2008, by a suitable MOU, all responsibility of the LRWQCB relating to

fuel reduction projects performed within the Tahoe Basin. The intent is to have an expedited single permitting process, eliminating the need for the LRWQCB to issue a second permit, and to achieve consistency in the application of environmental laws as relates to these kinds of projects in the Tahoe Basin. In addition, pursue the execution of a Management Agency Agreement (MAA) between the State Water Resources Control Board (SWRCB) and TRPA in accordance with SWRCB existing policy for non-point discharge. Consideration of an MAA while not expected for several months is not intended to be, nor shall it be considered a basis for, delay in execution of the MOU between the LRWQCB and the TRPA.

2. It is further recommended that the Governor of the State of California, within the framework of his legal authority, direct the LRWQCB to request comments from the TRPA Governing Board prior to enacting any new regulations and/or revised interpretations of existing regulations relating to or otherwise affecting removal or mitigation of fire hazards.
3. It is recommended that the Governing Board of the TRPA adopt suitable procedures allowing interested persons affected by approvals or denials of fuel reduction projects that are subject to the TRPA's revised MOU with the LRWQCB with regard to such matters to appeal such decisions to the TRPA Governing Board provided that good cause is shown for such appeals, that such reviews are conducted in open meetings, and such reviews are conducted in an expeditious manner that does not unreasonably delay the implementation of the subject fuel reduction project.
4. It is recommended that the Director of CALFIRE be empowered by the Governor of the state of California to monitor, and report to the Governor the progress on, the development of the MOU between the LRWQCB and the TRPA with regard to reduction of fire hazards. It is further recommended that the final MOU be submitted to, and be subject to the prior review and comment by the director of CAL FIRE.
5. The agencies represented on the permit streamlining group have submitted a substantial list of planned actions to the Commission. The implementation of these actions is urgent, their details need direction from fire professionals, and an important goal is to achieve Basin-wide permitting consistency for fuel reduction projects. It is therefore recommended that the Governors of Nevada and California appoint their respective State Directors of fire fighting activities (the Nevada State Forester/Firewarden, and Chief, CALFIRE, respectively) to monitor the implementation, and report to the Governors, the progress of permit streamlining actions.
6. It is further recommended that quantitative standards for soil productivity and hydraulic function as developed by the U.S. Forest Service, Region 5 and/or Pacific Southwest Research Station be utilized throughout the Lake Tahoe Basin.
7. It is further recommended that Region 5 of the U.S. Forest Service, with guidance from the Pacific Southwest Research Station, develop implementation and effectiveness monitoring protocols to ensure that the quantitative standards for soil productivity and hydrologic function are met.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost / It is believed the implementation of these recommendations will reduce direct costs to the State of California. The amount of the cost savings to the State of California is unknown at this time. However, there will be corresponding substantial savings to property owners and land managers that will be relieved of having to comply with otherwise duplicative permitting processes.

- Funding source / It will be necessary for the State of California to make an adjusting contribution to the TRPA budget for its assumption of these obligations from the LRWQCB.
- Staffing / Unknown at this time. The TRPA has qualified staff to handle such matters, and currently does such reviews at this time.
- Existing regulations and/or laws / This does not change existing laws or regulations, but reassigns responsibilities within existing regulatory framework.

Analysis of impacts on the following factors is OPTIONAL:

- Operational / These changes will greatly enhance the ability of private property owners and other land managers to perform necessary fuel reduction projects within the WUI.



Kathy Murphy

Stream environment zone burned in the Angora Fire, June 2007

Finding 13

Regulatory and implementing agencies in the Lake Tahoe Basin have failed to provide homeowners with a consistent message regarding defensible space and erosion control Best Management Practices (BMPs). Compliance with all requirements of defensible space is lacking in the Basin.

Background and Supporting Evidence:

One of the limiting factors in creating defensible space within 30' of a structure in the Lake Tahoe Basin is the homeowner's reluctance to remove dry flammable vegetation for fear of violating BMP regulations. In many cases, homeowners believe they must cover all bare soil with wood chips or pine needles in order to be BMP compliant.

The Tahoe Basin Fire Chiefs, in their 9 point letter to the Tahoe Basin Fire Commission, recommended that the TRPA accept ". . . the removal by homeowners of all flammable material, vegetation or other combustibles including pine needles and wood mulch around a building or structure to 30 feet."

California Public Resources Code (PRC) 4291 requires at all times that all residents maintain around and adjacent to their home a firebreak made by removing and clearing away all flammable vegetation or other combustible growth. However, PRC 4291 allows single specimens of trees, ornamental shrubbery, or similar plants that are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to the home. Tahoe Basin Fire Chiefs have agreed to adopt PRC 4291 as the defensible space standard. Clearly, there is a need to actively enforce PRC 4291 on the California side of the Lake Tahoe Basin and there is a need for the Nevada jurisdictions to formally adopt PRC 4291 standards and enforce compliance.

The Living With Fire (LWF) Program, created by Ed Smith and Paul Tueller of University of Nevada Reno and Fire Chief Loren Enstaad of the Sierra Front Wildfire Cooperators in 1997, is the leading educational resource for homeowners in the Lake Tahoe Basin who want to create defensible space and protect their home. The Living With Fire in the Lake Tahoe Basin recommendations have been recently revised by all fire agencies in the Lake Tahoe Basin and will serve as the basis for the development of public education tools to help homeowner's understand how to create defensible space.

The defensible space and best management practices working group met on December 4, 2007. The following was drafted by Ed Smith and Elwood Miller following the December meeting.

"Non-combustible:

- Stabilized bare ground and mineral soil covered by a decomposing layer of duff.
- Gravel, rock, asphalt, concrete, etc.
- Healthy, well maintained, actively growing, high moisture content herbaceous plants, such as turfgrass, bunchgrasses, clover, succulents, and flowers (i.e. forbs).

Combustible groundcovers include:

- All dead vegetative plant material including cured grass, pine needles, detached leaves and branches, pine cones, wood chips, bark mulches, dried leaves, needles, and dead branches attached to living plants.
- All living vegetation, except for well maintained herbaceous materials as described above."

It was also stated at the December 4, 2007 meeting that Tahoe Regional Planning Agency (TRPA) and

BMP professionals that completely covering all bare soil with wood chips or pine needles was never a recommended BMP. Covering bare soil with wood chips or pine needles has become an inexpensive way for homeowner to comply with the BMP requirements.

Finally, a general agreement was reached at the December 4, 2007 meeting, that raking of pine needles annually could be a recommended practice. Wood chips or pine needles within planters not adjacent to the structure or capable of rapidly carrying fire to the structure would be acceptable. It was also agreed that the use of woodchip or pine needles should not be utilized or recommended as a widespread groundcover within 30' of a structure.

Further correspondences between the Tahoe Basin Fire Chiefs representatives and TRPA staff resulted in an agreement that raking of pine needles within 30' of a structure is not an absolute prescription, but a necessary tool in the hands of the fire agencies. There will be subjectivity in the enforcement and implementation of the regulations. Tahoe Basin Fire Chiefs representatives and TRPA staff have also agreed to continue the use of a Memorandum of Understanding (MOU) allowing the fire agencies to mark trees for defensible space. A revised MOU will allow tree marking by fire agency staff with some basic training. All trees greater than 14 inches in diameter will require a mark prior to removal.

Recommendation(s)

1. The Governors should direct regulatory and implementing agencies in the Lake Tahoe Basin to come to agreement on a single, clear and consistent set of guidelines and practices to make it easier for property owners to attain defensible space around their properties without violating erosion control "best management practices" (BMPs). These shall include:

- A. All practices must be in compliance with California PRC 4291, and with the principles described in the most recent revision of the "Living With Fire - Lake Tahoe Basin Recommendations".
- B. All regulatory authorities having jurisdiction within the Lake Tahoe Basin shall adopt the following defensible space standard for the area within 5 to 30 feet of any structure:
 - a. During fire season, the area that is 5 to 30 feet from any structure shall entirely or predominately consist of noncombustible materials. Noncombustible materials include the following:
 - i. Stabilized bare ground and mineral soil.
 - ii. Gravel, rock, asphalt, concrete, etc.
 - iii. Healthy, well maintained, actively growing, high moisture content herbaceous plants, such as bunchgrasses, clover, succulents, flowers (i.e. forbs), and turfgrass.
 - b. Specimen plants or limited areas of combustible materials included within a landscaping plan may be acceptable within this 5 to 30 foot zone, provided they do not provide a means of rapidly transmitting fire across this area from the wildlands to the structure or vice-versa.
 - c. Fallen pine needles shall be removed from areas within this 5 to 30 foot zone prior to fire season each year and shall not be allowed to accumulate in any manner that creates a fire hazard. Wood mulch shall not be used in a widespread manner within this zone due to its combustible nature and the inability to maintain this material free of excessive pine needle accumulation. (NOTE: It is assumed that pine needles will accumulate seasonally and be left for the winter to stabilize the ground, and be removed each spring for defensible space purposes.)

C. No permit shall be required for removal of trees less than 14 inches in diameter at breast height.

D. Trees greater than 14 inches in diameter at breast height that are deemed a fire hazard by trained fire officials working under an MOU with the TRPA may be removed with the fire officials approval and mark.

2. The work of the Nevada Fire Safe Council should continue and be funded to ensure that homeowners have low cost options for obtaining defensible space treatments. The Fire Safe Council currently organizes communities and negotiates rates with contractors to treat entire blocks of properties. This work, in conjunction with an effective inspection program by the Fire Agencies ensures that homeowners have reasonably priced options to complete the necessary work with guidance from the fire professionals.

3. Education, inspections and enforcement of defensible space must emphasize the importance of removing vegetative fuels on the property and actively educate the homeowner about building envelope ignition resistance. Homeowners must address both defensible space and building ignition resistance.

4. There is a need to enforce defensible space such that if it is not done within a certain period of time after an inspection, there are consequences. These consequences may include fines provided for under PRC 4291, additional fines imposed by TRPA and/or after some number of notices of violations have been issued, a homeowner may be billed for work done after the fact (or have a lien placed on their home until the bill is paid.). This is an action also provided for in PRC 4291, though with a longer time frame and after several other conditions have been met. Because one home without defensible space can threaten all adjacent homes and/or the surrounding community, the entire community must be considered when assessing appropriate enforcement actions. We expect most people would want to see enforcement action taken on non-compliant neighbors.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost - there would be no costs incurred to adopt this standard.
- Funding source - not applicable
- Staffing - not applicable
- Existing regulations and/or laws - does not conflict with existing laws or regulations.

Analysis of impacts on the following factors is OPTIONAL:

- Environmental – possible increase in erosion if not properly implemented

Finding 14

A comprehensive wildfire protection education framework “Living With Fire” currently exists in the Tahoe Basin.

Background and Supporting Evidence: The Living With Fire program is an interagency wildfire threat reduction education program for homeowners coordinated by the University of Nevada Cooperative Extension. The objective of the program is to encourage homeowners to accept responsibility for wildfire threat reduction to their homes and to implement the practices necessary to protect their property. Since 2001, Lake Tahoe Basin specific Living With Fire materials have been developed and distributed to Lake Tahoe fire fighting agencies, homeowners, and others. Wildfire threat reduction recommendations used in the Living With Fire — Tahoe Basin program are developed through a collaborative effort involving the Tahoe Basin fire protection districts and department, CAL FIRE, USDA Forest Service, NDF, and the Universities of Nevada and California Cooperative Extension and are reviewed by TRPA to ensure compliance with their codes and policies. These recommendations are then disseminated to Tahoe Basin homeowners and others via a variety of delivery methods including publications, homeowner workshops, television programs, videos, exhibits, and a Living With Fire — Tahoe Basin specific website (www.livingwithfire.info/tahoe). For the most part, the Living With Fire — Tahoe Basin program is dependent upon annually acquired grant funds for continued operation. To increase effectiveness and sustainability of the program, the Living With Fire coordinators recommend: 1) permanent funding or long term grant funds be acquired to support the program and 2) a Living With Fire — Tahoe Basin program coordinator position be funded.

Recommendation: Support and enhance this valuable fire prevention education program and develop permanent and stable funding sources for prolong program services.

Impacts of Implementation

- **Cost:** Living With Fire program coordinator position (salary, fringe, and some operating funds) would cost about \$85,000/year (assumes University of Nevada Cooperative Extension provides office space and administrative oversight and that additional operating funds would be generated from extra-mural sources).
- **Funding Source:** Grants, donations, corporate sponsorship, agency funds, etc.
- **Staffing:** A program coordinator position funded from the above listed sources and administered by the University of Nevada Cooperative Extension.
- **Existing regulations or laws:** NA

Finding 15

There is a need for private property owners to become involved in the funding and implementation of defensible space and other fire safety programs within the Lake Tahoe Basin. Tax credits and other incentives should be developed to encourage the implementation of such programs.

Background and Supporting Evidence:

Local fire districts are responsible for defensible space inspections, and work with their constituents to assess and implement fire hazard reduction measures. Since the great majority of private property in the Tahoe Basin is out of compliance with defensible space regulations, money should be focused on local inspections and implementations.

The cost of treatment per acre can in some instances be higher in the Tahoe Basin than in other areas of the Sierras. Consequently, money needs to stay within the community to effectively treat properties. Federal and state allocations in the Tahoe Basin need to be matched or complemented by local funds.

Tahoe is a unique environment with regards to the need for more protective regulations, including BMP implementation, which must be coordinated with defensible space implementation. Local fire protection districts are in a position to best understand the local environment, communities and defensible space regulations.

Defensible space compliance is highly variable throughout the Basin with variable urban densities. Local fire protection districts are better able to gauge the needs and compliance and remove obstacles.

Recommendation(s) (Based upon an analysis of the Finding, the following recommendation(s) should be made to the Governors):

The following Recommendations apply Basin wide (in both states):

1. Financial incentives should be developed and provided for homeowners in local fire protection districts in order to encourage the implementation of defensible space and other fire safety programs.
2. The fire agencies and districts within the Lake Tahoe Basin should develop performance standards for initial and follow-up (enforcement) inspections relating to defensible space and other fire safety programs in order to improve the provision of such services and the effectiveness of such programs.
3. Federal and State allocations of funds for fire safety programs within the Lake Tahoe Basin should be supplemented by local funds in order to maximize the implementation of such programs and to involve local property owners in the funding of such obligations.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is **REQUIRED** (Best Estimate):

Cost :Additional cost will not be a factor because there will be a redistribution of funds

Analysis of impacts on the following factors is **OPTIONAL**:

Environmental: Since local fire districts can better evaluate all dynamics involved in defensible space than regional or state agencies, fire hazard will be reduced.

Finding 16

There are no CAL FIRE Prevention Positions in the Basin and apparently no Forest Service Prevention Staff funded under the Balancing of Acres agreement.

Background and Supporting Evidence:

The USFS currently provides fire protection and suppression for SRA within the Basin under the Balancing of Acres concept. There is a huge backlog of inspections in the Basin due to lack of staffing.

Recommendation(s):

Station a minimum of two CAL FIRE Prevention Positions in the Lake Tahoe Basin permanently.

Impacts of Implementation:

- Cost – Anticipated fiscal impact - 250,000 to 300,000 per year

Analysis of impacts on the following factors is OPTIONAL:

- Would require cooperation between the USFS and the CAL FIRE Units involved, as well as the local Fire Districts to coordinate inspection efforts.

Finding 17A

The use of appropriate building materials helps prevent homes from ignition in a fire.

Background and Supporting Evidence:

Studies have shown that with the right building materials, homes can be constructed so that they have a good chance of withstanding a fire (most successful when in combination with defensible space). Certain building materials are more susceptible to ember ignitions, which was one of the main causes of homes lost in the Angora Fire. Additionally, embers from burning homes ignited adjacent homes, indicating that using proper building materials reduces the risk to both that home and adjacent homes. California has utilized the scientific findings from studies of building materials to pass new Building Code standards which require new homes to be built using materials that can resist ember ignitions. Chapter 7A of the CA Building Code (The new standards apply to all homes in CA built starting 1/1/08). Residents on the NV side of the Basin should be provided with the same level of protection as those on the CA side. Additionally, in the Fire Chiefs' "9-point letter [Sept. 2007]," there was recognition that the new building codes should be utilized Basin-wide.

Additionally, there are actions and modifications that existing homeowners can do to help reduce their chances of ember ignitions as well. Studies have shown that clearing roofs of flammable debris, installing double-paned windows, placing "flashing" between wood fences, decks, etc. and covering vents (e.g. attic vents) and open areas (e.g. under decks) with wire mesh, and other actions can save a home in a wildfire (for examples and more information, see www.firewise.org).

Finally, one of the major causes of homes burning is due to wood roofs igniting by embers (Cohen 2000). There are many homes in the Basin which have wood shingle roofs, thus posing a threat to not only that home, but all of the surrounding homes as well. Replacing wood roofs is one of the most effective retrofits a homeowner can do. Besides posing a significant fire hazard, homes with wood roofs are less likely to be protected by fire professionals in the event of a multi-home fire. Fire professionals have indicated that they will fight to save the home that has the best chance for survival—those with defensible landscaping and proper building materials (and maintenance, e.g. clearing flammable debris from rain gutters, decks, etc.). However, replacing existing wood roofs is expensive and therefore difficult for many residents to afford.

Recommendation(s)

1. It is recommended that TRPA consult with appropriate Nevada counties to evaluate if Chapter 7A standards of the California building code can be adopted so that a consistent level of protection is provided throughout the Lake Tahoe Basin.
2. It is further recommended that the local Fire Marshals communicate building code process and technical changes to the TRPA no less frequently than yearly.
3. It is further recommended that CAL FIRE hold a yearly workshop to demonstrate new advances in ember resistant devices for home retrofit applications. This workshop should include devices to retrofit roofs, attics vents, crawl space vents, decks and windows.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

Analysis of impacts on the following factors is OPTIONAL:

- Health and Safety: Science proves that these activities can save homes from a fire. In fact, with proper defensible space as well, homes have survived while crown fires raged just 100 feet away.
- Environmental: These activities would result in fewer homes burned in the next fire, which will significantly reduce the environmental impacts associated with a wildfire.



US Forest Service

Home burning in Angora Fire; surrounding vegetation in tact

Finding 17B

Building codes within the Tahoe Basin have generally been updated and modified by State and local authorities to require fire safe construction materials. However, many existing structures in the Tahoe Basin do not meet current building codes and standards relating to fire safety. Consequently, there is a need to require the retrofitting of such structures to make them safer from the hazards of catastrophic fire within the Basin.

Background and Supporting Evidence:

The risks of fire within the wildland urban interface have clearly been identified by State and local governments, and serious efforts have been undertaken by the building and public safety agencies of such authorities to address building codes and related requirements in such areas. An example of this effort is the recent publication by Cal-Fire of “Wildland Urban Interface (WUI) Products”. Local authorities in the Tahoe Basin have generally addressed new construction or substantial remodels of existing structures, but generally have not addressed the retrofitting of existing structures to meet current requirements for new construction or substantial remodels. For example, most local authorities no longer allow wood shake or shingle roofs to be installed on buildings within the Tahoe Basin. However, notwithstanding the implementation of these requirements for new construction or roof replacements, there are thousands of structures within the Tahoe Basin having wood shake or shingle roofs.

Recommendations:

It is recommended that all local governmental authorities in the Tahoe Basin having jurisdiction and control over buildings and structures, including the various fire agencies located within the Tahoe Basin, adopt suitable ordinances requiring the retrofitting of existing structures within the Tahoe Basin to meet modern fire standards suitable for use in wildland urban interface areas. In particular, it is recommended that all buildings presently existing in the Tahoe Basin that have wood shake or shingle roofs be required to replace existing roofs with roofing materials that are ignition resistant and suitable for use within wildland urban interface areas.

2. It is recommended that the local governments, with the assistance of the Tahoe Basin Fire Chiefs and any Basin-wide Fire Safe Council or other organization formed to address fire safety matters in the Basin, pursue any grant or loan programs that may be available to assist property owners in retrofitting their residences to meet these requirements.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost / The costs of such retrofitting requirements will be very high, and will be borne by property owners unless grants or loan programs can be found. It is not possible to estimate the costs of such retrofit requirements.
- Funding source / Presently, there are no funding sources other than the personal funds of affected property owners.
- Staffing / Not applicable
- Existing regulations and/or laws / This action will require adoption of suitable laws and ordinances by the relevant local authorities.

Finding 18

Much of the Tahoe Basin public and private water distribution infrastructure is inadequate to provide the fire flows necessary to meet current fire codes and fire agency needs.

Background and Supporting Evidence:

The vast majority of water distribution infrastructure within the Lake Tahoe Basin was intended to provide only domestic potable water, and was never designed to provide fire flows necessary to meet current fire codes. For the most part, these public water systems represent an amalgam of previously small independently-owned water systems that have been interconnected into an aging and very complicated water distribution network. Since acquisition of these systems, and especially since the early 1990's, public agencies have made a significant investment in water infrastructure improvements in an attempt to close the gap between existing capability and that desired by fire agencies. Even with these significant improvements, the overall challenge is in excess of \$100 million and, at current funding levels, will likely take 20 years or more to complete. Additionally, there are a significant number of small private water companies with similar infrastructure and funding challenges. Collectively, these constraints substantially limit the fire agencies ability to prevent structure fires from extending into the wild land urban interface (WUI) as evidenced by the Washoe Fire. It also hinders the suppression of large scale wild land fires in the WUI as seen in the Angora Fire.

Recommendation(s):

It is recommended that a consistent Basin-wide deficiency study and needs assessment based on existing conditions and current fire codes should be completed to make recommendations in determining the cost associated with replacing and updating undersized water distribution infrastructure. This study and assessment should be completed by the utility district and private water purveyors throughout the Lake Tahoe Basin. Based on the study annexation on private water systems into public utility districts must be evaluated and considered. Based on the assessment the utility district should pursue loans, grants and rate increases as necessary and appropriate.

Impacts of Implementation:

- Cost: Total cost likely in excess of \$100 million
- Funding source: Federal funding, loans, grants, rate increases, etc.
- Staffing: No anticipated impact
- Existing regs or laws: Should not be in conflict with existing regulations or laws

Finding 19

The 2007 Angora Fire has provided the USFS, States of Nevada and California, and the TRPA and other environmental authorities, with an opportunity to implement forest restoration techniques that can be a model for the rest of the nation. Efforts should be immediately undertaken to restore the forests burned in the Angora Fire.

Background and Supporting Evidence:

The Commission has been advised by a licensed forester having exceptional experience and qualifications in forest health and restoration that unless immediate steps are taken the forested areas within the Angora Fire burn zone will lose commercial value, will exude excessive amounts of greenhouse gases as the remaining trees die and decay, and will result in the conversion of the burned area to one of dead trees and growths of scrub for many, many years. However, he also estimates that 98% of the greenhouse gases released by the fire could be recovered over time by salvaging fire killed timber and restoring the forest. In addition to these benefits, by providing for appropriate harvesting of the remaining fire-damaged and dead trees and undertaking restoration efforts, a healthy, vibrant forest will return to the area, along with its attendant benefits to the community and the Lake.

There is a need to move quickly, as the commercial value of the remaining burnt trees diminishes quickly as bark beetles and other infestations attack the weakened trees. The present commercial value of the lumber that can be salvaged, if such efforts are permitted to be undertaken right away, should pay for the costs of such removal and a significant portion of the costs of restoration of the burned area.

It is not the intent of the proponents of this F&R, nor should it be the intent of the Commission if this F&R is adopted, that any recommended action herein supplant or result in the modification of the USFS South Shore Fuel Reduction Project that is currently under way.

Recommendation(s)

Recommendation 1: The Governors of the States of Nevada and California should request the United States Forest Service and all other landowners within the Angora Fire burn area to immediately undertake a project to facilitate the removal of burnt trees from the area that are salvageable for commercial purposes including, as necessary, allowing commercial logging concerns reasonable access to the area to undertake such removal.

Recommendation 2: The Governor of the State of California should request or direct, as appropriate, the TRPA and the California State Water Quality Control Board/Lahontan Region, and other State agencies under his administration that have jurisdiction in the Angora Fire area, to expedite the permitting process to allow such tree removals including, if necessary, the waiver of any regulatory requirements that may impede such timber removal.

Recommendation 3: The Governors of the States of California and Nevada should request the TRPA and the United States Forest Service to adopt and implement a forest restoration plan for the Angora burn zone that will serve as a model for the rest of the nation and that will restore this important part of the Tahoe Basin in a manner that will benefit the Lake over the long term.

Recommendation 4: It is recommended that first priority for clearance of burnt trees and forest restoration efforts in the Angora burn area (in both terms of timing and funding) be given to areas within the wildland urban interface area, the area within ¼ mile of any dwellings within the burned area.

Recommendation 5: It is recommended that the above recommendations be adopted by the States of California and Nevada and the United States Forest Service, as the standard procedure to be followed

in any future areas of the Lake Tahoe Basin that are subject to catastrophic fire.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost / It is believed that the costs of facilitating removal of the salvageable materials from the Angora Fire zone will be minimal, and that the costs of reforestation of the area can be offset by the sums that commercial logging concerns would be willing to pay for such rights. Further, it is believed there would be great support for restoration of this area by conservation groups and residents of the Tahoe Basin.
- Funding source / See above
- Staffing / No impact
- Existing regulations and/or laws / Existing laws and regulations would not have to be changed to allow removal of the burned materials and restoration of the area.



Christy Daugherty

Salvage operation on California Tahoe Conservancy land

Finding 20

Fuel reduction treatments implemented on National Forest System urban intermix parcels within the Angora Fire reduced fire behavior from crown fire to surface fire as designed, even under the extreme fire weather conditions experienced on June 24, 2007.

Background and Supporting Evidence:

The USDA-Forest Service, Lake Tahoe Basin Management Unit manages small segments of urban forest, commonly referred to as urban lots or urban intermix lands; and that these lands were acquired to protect them from development and to protect water clarity for the purpose of preserving the hydrologic function of sensitive lands and conserving natural forest conditions within the urban setting. The Forest Service has completed initial fuel reduction treatments on 75% of the National Forest urban intermix parcels, with plans for completion by 2010. The Forest Service is implementing fuel reduction maintenance on post-initial treatments and is working with local fire districts to prioritize and implement these maintenance treatments.

Urban Intermix Lands (urban lots) consist mainly of parcels of land that have been acquired by purchase, donation, or other means, under authority of Public Law 96-586 (Santini-Burton Act) of December 23, 1980. The acquisition and management of environmentally sensitive lands authorized by Santini-Burton Act is often referred to as the urban lot program. Many of the acquisitions are small lots (less than 1 acre) in urban subdivisions.

The USDA Forest Service, Lake Tahoe Basin Management Unit has been implementing fuel reduction treatments on National Forest System urban intermix parcels since 1995. The fuel reduction treatments being implemented are designed to (1) reduce the potential of catastrophic wildfire effects by making crown fires less likely, (2) improve defensible space protection to adjoining private lands; and (3) enhance forest ecosystem health.

The fuel treatments encountered during the Angora Fire reduced ember production, and reduced heat and smoke allowing firefighters to be more effective. Treated urban intermix parcels served as fuel breaks, allowing firefighters to safely protect structures and slowing fire spread. Eye witness accounts, firefighter interviews and post fire on-site inspections indicated a significant reduction in fire intensity when fire entered treated urban lots (flame lengths were less than 4 feet). The exception was those lots on steep slopes that burned similar to areas without treatment.

Urban Lot Management Program Accomplishments since 1995:

- ❖ 1750 acres of hazardous fuels management has been completed. (2,400 urban lots and 4 miles of urban interface lands)
- ❖ 470 acres of re-entry (follow up) fuels and forest health treatments (730 urban lots)

Some larger urban forest parcels and additional urban interface lands have received fuel reduction treatments under other Forest Service fuel reduction projects.

Remaining Work and Maintenance of Fuels Treatments:

Of the roughly 3,200 urban intermix parcels managed by the Lake Tahoe Basin Management Unit (LTBMU), approximately 25% (670 parcels, 1,000 acres) remain requiring various degrees of initial fuel reduction treatment.

The Forest Service has developed a plan to finish initial treatment on all National Forest System urban

intermix parcels and transition into a maintenance level program by 2010. In addition, the Forest Service is implementing maintenance fuels treatments on older treatments. This work is being coordinated with other projects being conducted by Fire Safe Chapters and local fire districts. In some cases the implementation of these maintenance treatments is being conducted by the local fire districts under a stewardship agreement. The Forest Service also implements a Fuels Reduction Stewardship program that allows adjoining property owners to implement maintenance fuels treatments on National Forest System lands.

The Forest Service is currently evaluating National Forest urban intermix parcels with SEZ conditions to determine where additional fuels treatments are needed. This evaluation has already been completed for the South Shore and SEZ treatments on National Forest urban intermix parcels are included in the South Shore Fuels Reduction Planning Project (planning expected to be completed late summer 2008).

National Forest Urban Intermix parcels – Angora Fire

In August 2007, the report “An Assessment of Fuel Treatment Effects on Fire Behavior, Suppression Effectiveness, and Structure Ignition on the Angora Fire” (USDA R5-TP-025 August 2007) was published by the USDA-Forest Service. A copy of this report has been provided to the Commission. During the assessment described in this report, the Forest Service team evaluated 70 of the National Forest System urban intermix parcels. The report shows that overall; the treatments were successful at modifying fire behavior by reducing fire behavior from active crown fire to surface fire, reducing ember production, and reducing fire intensity. The report also indicates that fuel reduction treatments on steeper slopes were less effective and that untreated urban intermix parcels burned with crown fire intensity.

Of the 129 National Forest System urban parcels within the Angora Fire perimeter, only 2 showed crown fire intensity. One was an untreated parcel located north of the Mule Deer area, not located within the subdivision, but adjacent and upslope from the subdivision. The other parcel was a large parcel adjacent to the south of the Angora Highlands subdivision. A portion of this parcel was treated in 1994 as part of a CDF/Forest Service mastication demonstration project. Portions of this treatment area on steep slopes burned with crown fire intensity.

Recommendation(s)

Recommendation #1A:

The treatment prescriptions that proved effective in the Angora Fire on National Forest System urban intermix parcels should continue to be utilized.

Recommendation #1B:

The Forest Service should consider more intensive treatments on steeper slopes where only pre-commercial thinning treatments are occurring. The current regulatory constraints should be revised to ensure implementation of this recommendation.

Recommendation #2:

The Forest Service should continue implementing the current plan to have all urban intermix parcels treated by 2010. The Forest Service should continue to implement the plan for maintenance of fuels treatments on urban intermix parcels, including utilization of stewardship agreements with local fire districts and stewardship permits for local land owners.

Recommendation #3:

The Forest Service should continue to coordinate fuel reduction treatments with state and local agencies as outlined in the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost – cost associated with continuing current implementation of Forest Service urban forest restoration and fuel reduction projects to remain at current levels. Cost for to implement maintenance treatments should be substantially less than initial treatment costs.
- Funding source – Federal appropriations, Southern Nevada Public Lands Management Act funding.
- Staffing – Forest Service staffing exist to implement recommendations.
- Existing regulations and/or laws – need to evaluate regulatory constraints on steep slopes.

Finding 21

Forest thinning and the institution of healthy forest management and maintenance practices are essential to restoring health to Lake Tahoe's forests in order to protect against the hazards of catastrophic fires. Short-term solutions, coupled with long-term programs, must be accepted and implemented without delay in order to prevent long-term devastating impacts on the Lake and its residents that catastrophic wild fires would create.

Background and Supporting Evidence:

The forests within the Tahoe Basin are substantially different today than the forests that existed in the Basin prior to European/American settlement (prior to 1870). Prior to European/American settlement, low intensity fires burned every 5 to 18 years in the lower elevation pine and mixed conifer forests of the Basin, resulting in a forest consisting of widely-spaced conifer trees with a poorly developed shrub understory.

Between 1875 and 1895, large scale timber harvesting, including clear-cutting of many Basin forest areas, removed most of the widely-spaced trees around the Lake. Although forest stands successfully regenerated, the past 50 years of fire suppression and a reduced emphasis on forest management on public lands within the Basin has resulted in much denser forests (up to 4 times the pre-1870 density in lower elevation forests and twice the density in higher elevation forests); and abnormally increased build-up of fuels within the forests and resultant increased risks from fire.

Further adding to the severe fire hazards within the forests of the Tahoe Basin are the following circumstances resulting from the increased density of the forests:

- (a) Current forest stands exhibit a 70% higher disease incidence and a 5% greater mortality than remnant old growth stands in the Basin;
- (b) High rates of tree mortality, particularly white fir, have greatly increased the number of standing dead trees and downed logs;
- (c) Smaller, mid-story trees create fuel ladders that allow fires to readily move into dense crowns;
- (d) The lack of frequent low density fires has resulted in accumulations of dead fuels, increased understory shrubs, and dense young trees. As a result, flame lengths and rates of fire spread lead to higher intensity fires, leading to a greatly elevated risk of crown fires throughout the Basin.

When the TRPA was created, the prevention of catastrophic fire to the Tahoe Basin was not considered or addressed. Since then, forest fuels build up has occurred as the result of unintended consequences of regulatory efforts to curb erosion by making the removal of forest fuels difficult, if not impossible, to undertake, and by the efficiency of federal and local fire prevention efforts to eliminate fires within the Tahoe Basin. Due to a number of conditions, including insect infestations and drought, circumstances have changed since the TRPA was created and now the threat of massive, catastrophic fires poses risks to public safety, property, and the environment of the Tahoe Basin never imagined by the creators of the Tahoe Regional Planning Compact.

Recognizing these changed circumstances, the TRPA Governing Board, beginning in 2002, adopted various resolutions making the avoidance of catastrophic fires within the Basin the number 1 priority of the TRPA. More recently, since the Angora Fire, the TRPA has created "Catastrophic

Wildfire Prevention Committee”. These efforts are to be applauded. However, there continues to be a need for the TRPA, as the only regulatory agency having jurisdiction over all parts of the Tahoe Basin, to exercise leadership in addressing the hazards of catastrophic fire to the environment as well as to public safety, by assisting all property owners, land managers, agencies, and governmental authorities in the Basin as they try to implement sound practices to eliminate or avoid, to the extent possible, the risks of catastrophic fire.

Recommendation(s)

1. The forests of the Basin are natural resources that should be preserved and managed in order to insure forest health and to reduce the risks of catastrophic fires.

2. The TRPA should continue to make the avoidance of catastrophic fire its number one priority and should be aggressive in facilitating fuel reduction projects within the forests of the Tahoe Basin’s forests and in approving and permitting projects by the Basin’s land managers and property owners to remove fuels from the forests within the Basin and to implement forest restoration plans.

3. Article V, Section (c)(3) of the Compact requires the TRPA to adopt a conservation plan for the preservation, development, utilization, and management of the scenic and other natural resources within the Tahoe Basin. The TRPA reports that it has adopted such a plan. The TRPA Governing Board should take aggressive steps to facilitate cost effective vegetation treatments and fuel removal projects including, where necessary and appropriate, access roads and other means of access, in order to complete such projects and to provide emergency access by the fire agencies.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

- Analysis of impacts on the following factors is REQUIRED (Best Estimate):
- Cost / There are no apparent costs to this action.
- Funding source / not applicable
- Staffing / Can be handled by current staff
- Existing regulations and/or laws / does not require any changes to existing law or regulations

Finding 22

The *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* provides a method to prioritize and coordinate fuel treatment work across ownership boundaries in Lake Tahoe Basin.

Background:

The Commission has heard public comment during the September 10th and 21st meetings that the agencies conducting fuel treatment work in the Lake Tahoe Basin do not appear to coordinate their activities, communicate effectively treatment priorities, or seek efficiencies when implementing projects. The White Pine Bill requires development of a basin-wide strategy to qualify for SNPLMA funding. The agencies in the Basin are required to develop an integrated strategy and update it annually. The agencies identify strategic priorities so that there is agreement on areas needing treatment first across all jurisdictions in the Basin. Funding under the White Pine authorization is available to both federal and non-federal organizations.

Alternatives:

1. Adopt the Ten-year Strategy as the method to coordinate, prioritize, and inform the public of fuel treatments planned within the Basin.
2. Establish a Basin-wide coordinating process lead by TRPA.
3. Continue as is without a formal coordination process.

Impacts:

- Fiscal – The coordination options should increase efficiency and effectiveness of fuel treatments planned in the Basin. Alternatives 1 and 2 could be done as part of existing agencies process, minimizing additional planning expenses.
- Operational – Alternatives 1 and 2 provide the opportunity to greatly increase operational effectiveness and efficiency. They could enable fuel treatment agencies to leverage funding to accomplish more acres than individually.
- Legal – Adopting Alternative 1 will satisfy the objective of coordinating fuel treatments across jurisdictional boundaries and enable all agencies within the Basin to compete for Federal SNPLMA funding annually.
- Social – The public will have an effective method to learn about all of the fuel treatments planned annually.
- Political – Coordination will address concerns of Congressional delegations.
- Health and Safety – Alternatives 1 and 2 may allow agencies to prioritize location of fuel treatments to maximize community protection. This has the potential to reduce the risk of loss of life and property in the Basin.

Recommendation(s):

The Commission endorses the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* and its annual updating process as the mechanism to achieve

interagency coordination, increased economic and operational efficiency, and public awareness of fuel treatment priorities within the Basin for the next ten years.

The 17 agencies covered by the ten-year strategy will develop one or more fuel treatment projects that integrate fuels treatment across jurisdictional boundaries with one decision document, combined funding, and one implementation contract to the extent feasible under their legal authorities. This recommendation should be applied to Round 9 and all subsequent SNPLMA funding cycles.



US Forest Service

Heavy forest fuels in Tahoe Basin

Finding 23

Woody biomass processing is an essential component of restoring healthy forest conditions, reducing the severity and intensity of future wildfires, lowering air & water pollution, and has the potential for managing greenhouse gas reduction in the Tahoe Basin.

Background and Supporting Evidence:

We have seen the devastation a wildfire can bring to the Tahoe Basin and do not wish to allow this to happen again and are promoting the utilization of the forest woody biomass rather than allowing it to burn in the open by uncontrolled wildfire.

There are currently no biomass-to-energy processing facilities in the Tahoe Basin due to several issues, including 1) access to materials, 2) cost of acquiring woody biomass, and 3) consistent, adequate supply of biomass materials for processing. Forest treatment and air quality permitting and enforcement protocols can create uncertainty, delay, and expense to discourage biomass operations.

To make in-Basin biomass processing a near term reality there must be significant public and private investment. Further, to successfully implement in or near Basin biomass harvesting as part of any forest treatment there must be certainty of long-term supply, economical access to that supply, equipment set-up at or near materials locations and if necessary, supplementary funding to offset unrecoverable costs.

For several years, all Tahoe region agencies priorities have included fire danger reduction through restoring healthy forest conditions with the removal of the unnatural accumulation of fuels. With the new *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* to reduce hazardous forest fuels it is expected that significantly more biomass will be generated. This will require large amounts of removal and disposal, or utilization. Because this material currently has very little commercial value and the cost per acre can be higher in sensitive environments (i.e. stream environmental zones [SEZs] due to limitations on the use of mechanized equipment and limits on the use of prescribed burning to meet both ecological and fuel reduction objectives, most agencies and landowners are faced with the expense of 1) disposal by burning, 2) potential disposal to a landfill (although not practice in the basin), 3) chipping and spreading, or 4) transporting it to green energy facilities for conversion to renewable energy, an option that facilitates utilization, not disposal. Once the initial treatment has occurred on the forest, then prescribed burning is also a preferred option on the landscape. Therefore, the accommodation within TRPA's environmental thresholds must be accomplished.

Currently woody biomass is being transported out of the basin. Last summer the Placer County biomass box program transported 615 tons to a green energy facility 50 miles away (this is in addition to the standard green waste removal via county contractor in the Tahoe Basin). This effort provided renewable energy, climate change benefits and lowered pollution levels. The Nevada Fire Safe Council sponsors chipping and spreading even more tonnage each year.

Recommendation(s)

We advocate that the following be recommended to the Governors of the states of California and Nevada:

1. Provide financial and operational support to projects and programs that maximize efforts that promote biomass conversion to green energy as practical within and near the Tahoe Basin. This financial support could come from a combination of Production Tax Credits (similar to solar and wind), Feed-In Tariffs, future Carbon Credits and focused state grants and agency funding where feasible.

2. Where feasible and subject to an economic and ecological analysis demonstrating that processing facility investment in or near the biomass materials source is superior to hauling biomass materials to an existing processing facility, provide funding to accelerate viable coordinated stand-alone biomass to energy facility (or capability) at each end of the Tahoe Basin (due to economics and logistical issues of road use and forest access) to make the disposal of annual forest material a preferred option. Funding should be complementary to any private funding to develop a public/private partnership and could come from focused state grants and agency funding where feasible.
3. Direct regulatory agencies within the Tahoe Basin to establish consistency in the application of emissions thresholds for permitting process of facilities.
4. Direct state agencies and encourage all agencies to streamline access to biomass materials', including ensuring access through and within SEZs and use of temporary roading.
5. Direct state agencies and encourage all agencies to facilitate the use of state lands for biomass harvesting activities, and advocate the availability of federal lands for this purpose.
6. Advise the use of existing federal and state contracting tools to enter into long term (minimum 10-year) agreements for the supply of biomass materials to qualified utilization organizations. If necessary, the contracts would contain financial incentives to pay unrecoverable costs.
7. Allow the most cost effective and ecologically sound treatments on the landscape. The purpose of this recommendation is to reduce the cost per acre of treatment of the forested lands and cost per bone dry ton of the biomass to allow for a more economic basis to ensure utilization rather than disposal of biomass.
8. By gubernatorial and congressional action establish a goal that will maximize biomass potential for forest treatment under all annual planning mechanisms. The goal should provide assurance that a long-term supply (minimum 10 years) is available to attract private investment in biomass facilities. A higher goal, if possible, is preferred in order to minimize the air quality and other negative impacts of pile burning.
9. Request that both Governors advocate removing legislative barriers to utilization of woody biomass from public lands and both Governors advocate federal tax credit parity for all forms of renewable energy under the Federal Energy Policy Act

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost – standard per acre biomass treatment cost from past studies and information from prospective biomass operators.
- Funding source – new component of eligibility under existing revenue sources to subsidize deficit, but largest part of funding is expected to result from revenues from biomass utilization.
- Staffing – private sector applicants, current agency staffs.
- Existing regulations and/or laws – modify to allow access, establish in-Basin operating sites. If necessary, obtain legislative authority to ensure that the current process provide timely access.

Finding 24

Forests in the Lake Tahoe Basin are overly dense. Fuels treatments including thinning and prescribed fire have proven to be effective at modifying fire behavior during extreme fire conditions. These fuel treatments provide a safe area for firefighters to operate and improve the chances of tree survival following catastrophic fire.

Background and Supporting Evidence:

A century of fire suppression has led to an over crowded forest and an increase in fuel loadings over historical levels. The role of natural fire has been eliminated. Fuel treatments in the Angora Fire were proven to be effective at modifying fire behavior under extreme conditions except in areas of steep slopes (USDA, *An Assessment of Fuel Treatment Effects on Fire Behavior, Suppression Effectiveness, and Structure Ignition on the Angora Fire*, 2007). Areas without fuel treatments, including SEZs, experienced stand replacing fire. There are numerous additional examples on other wildfires where this same observable fact has occurred.

Prescribed Fire restores native forest conditions, protects the forest from catastrophic wildfire, and is often the most cost effective means to reduce the build-up of fuels. The effects of low to moderate intensity prescribed fires are very beneficial to the ecosystem, contrary to the often negative effects of high intensity wildfires. Prescribed burning is a critical tool that can be used to restore and maintain ecosystem components including vegetation, soils, watershed function, aquatic organisms, insects, diseases, and terrestrial animals and their habitats. Prescribed fire also protects human elements of life, property and cultural resources from damage by future wildfire, by decreasing surface fuel loading and potential wildfire intensity.

Recommendation(s)

1. Continue and increase implementation of thinning and prescribed fire treatments in an expeditious manner to promote a fire resilient forest.
2. Consider more intensive treatments on steeper slopes. The current regulatory constraints should be reviewed to ensure implementation of this recommendation.
3. Prescribed Fire and fuel treatment must be promoted as effective means of managing for a fire resilient forest. Practitioners of prescribed fire should develop educational materials outlining the benefits of prescribed fire and fuel treatments to better inform regulators and the public.

Impacts of Implementation: Areas that are thinned and burned will have more chance of surviving a catastrophic wildfire. Impacts are a reduced loss of forest due to wildfire, reduced costs of fire suppression and reduced emissions.

Finding 25

Low emission fuel reduction techniques are part of the necessary tools needed to minimize health-based air quality issues and visibility impacts when reducing the forest fuel load.

Background and Supporting Evidence:

The Lake Tahoe Area Air Quality Working Group identified three uses for disposal of forest fuels which do not depend on favorable meteorological dispersion conditions. Forest Fuels/Biomass can also be utilized for electricity and/or heating generation, and has been separately reviewed under the Biomass Working Group's recommendations.

1. The first is the use of air curtain burners as a viable solution for forest fuel reduction efforts. These devices have been successfully used in the Tahoe Basin for fuel reduction efforts. Since air curtain burners are not restricted to the California burn day status it is possible to increase the amount of material that can be burned on days when open pile burning cannot take place. Air curtain burners can be used in close proximity to the forest and existing structures. They also have the potential to reduce the amount of smoke (particulate matter) generated between 80 to 90% over open burning practices. (Information from Air Burners LLC at <http://www.aircurtaindestructor.com/>). An emissions evaluation would be completed by the air agencies to confirm emission reductions prior to the issuance of a permit to operate and/or during actual operations.
2. The second is utilization of forest fuels for firewood. Currently some firewood is imported into the Tahoe Basin for home heating, camp fires and recreational fires. This firewood is purchased at local stores or through private parties and adds to the existing fuels burned in the Basin. If firewood used for heating and recreational purposes were acquired within the Basin it would reduce the amount that is burned in open burn piles.
3. The last is utilization of chipped or masticated forest fuels as cover for best management practices (BMPs) and/or landscaping. Research indicates that chipping/mastication appears to be an effective thinning treatment for overstocked forests with few discernible negative impacts on soil compaction or lake-polluting runoff. (http://calag.ucop.edu/0602AMJ/pdfs/5_Mastication.pdf) Wood chips have proven to be a valuable commodity in the Tahoe Basin for erosion control practices, landscaping purposes, and bio-fuels facilities. The successful use of chips for erosion control has been utilized on public and private lands to stabilize the soil and prevent erosion on roads, trails, and other lands as well as to improve the aesthetics of an area.

Recommendation(s):

1. Consider air curtain burners as an alternative to open pile burning as one of the options for disposal.
2. Utilize the existing excess forest fuels (that must be removed to achieve forest health and fire protection purposes) for firewood and recreational experiences, especially in campgrounds and recreational areas. Encourage people selling firewood to use vendors that acquire their wood from the Tahoe Basin.
3. Encourage chipping and mastication practices whenever feasible with the by-product available for in Basin use.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

The following information applies mainly to the air curtain burner.

- Cost
 - Air Curtain:
 - \$70,000 to \$130,000 for one air curtain burner
 - Expected life 5 – 10 years
 - Explore maintenance costs
 - Chipping:
 - \$10,000 to \$20,000 for each small chipper
 - \$80,000 to \$200,000 for one grinder or masticator if needed
 - Expected life 5 – 10 years
 - Explore maintenance costs
 - These can be leased or contracted from an operator instead of purchased.
- Funding source
 - Burn Agencies
 - State budget earmark funding
 - Federal budget earmark funding
 - Explore TRPA
 - Explore SNPLMA
 - Explore Air Quality Grant Funding
- Staffing (may be existing staff)
 - One operator for air curtain burner
 - Two operators for chipping
 - Several personnel for hauling and loading.
- Existing regulations and/or laws
 - Permissible and permittable by TRPA and air quality agencies in Nevada and California
 - Would be exempt from California burn-day regulations
 - California Air Resources Board (CARB) staff indicated to the California Air District's that permitting portable air curtain burner equipment under CARB's Portable Equipment Registration Program was not appropriate.

Analysis of impacts on the following factors is OPTIONAL:

- Operational: This equipment would be able to operate year round, regardless of California burn day status.

- Social: While there is some noise from the operation of this equipment, the lack of visible smoke (except for initial startup and shut down) improves the scenic beauty of the area for both residents and visitors.
- Political: This method of disposal is one of a number of tools that can be used to affectively dispose of forest fuel, thereby providing ample opportunity to use the best tool for disposal for different situations.
- Policy: Can be operated under existing air quality regulations with a permit to operate.
- Health and Safety: While far more material can be burned, the decrease in smoke generated from this type of burning or chipping operations makes this an operation that can be used in sensitive areas or more populated areas without causing a smoke nuisance.
- Environmental: Ash is a byproduct from using this burner. It is unknown if this would be transported to the local transfer station for use suitable for spreading on the forest floor or available for other local (or regional) uses, (e.g. landscaping). Permits from regulatory agencies will insure that other environmental impacts (i.e. clearing areas for “landings” for equipment and possible disturbance) are mitigated. Chipping can be used for BMPs or added to forest duff.
- Interagency: Adjacent land managers can work together in choosing an appropriate site that can work for multiple land owners.



Christy Daugherty

Chipper involved in fuel reduction

Finding 26

In order to optimize burn windows for prescribed fire activities within the Lake Tahoe Basin, a need for more comprehensive air quality and meteorological information is necessary in order to obtain more detailed analysis of air quality conditions.

Background and Supporting Evidence:

A more comprehensive routine evaluation of atmospheric conditions in the Lake Tahoe Air Basin may result in increased burning opportunities in both California and Nevada. Real-time monitoring of fine particulates (PM_{2.5}), web cams, smoke dispersal modeling, and additional meteorological data can provide more specific information that can be useful in making burn day determinations and more comprehensive evaluation of atmospheric conditions for burning in both California and Nevada. The recent application of real-time PM_{2.5} monitoring, better access to meteorological data and web cams in the Southern Sierra has resulted in additional burn days and confidence in marginal conditions through immediate feedback during burn operations. In the Sequoia National Forest, a monitoring pilot project is in use, allowing air regulators and National Forest staff to view a burn and monitor the PM_{2.5} conditions throughout the day. The information is then used on a daily 1pm conference call between meteorologists, burn agencies and air regulators to make coordinated decisions with respect to smoke conditions and weather forecasts.

Recommendation(s):

The Lake Tahoe Area Air Quality Working Group recommends the following technologies be implemented or further analyzed for implementation in the Basin.

1. **Real time smoke/PM_{2.5} monitoring:** Recommend a PM_{2.5} monitoring program be established utilizing a network of BAM and EBAM instrumentation. Based on an assessment of existing air quality monitoring equipment in the Basin, at least 3 additional BAMs and 3 EBAMs are needed. This network could be complimented by other research being performed by academic institutions (e.g. UC Davis is involved with chemical speciation of PM). The Lake Tahoe Area Air Quality Working Group (Working Group) should develop an interagency collaborative plan, which may include Tahoe Basin researchers, to support and implement a comprehensive monitoring network in the basin. A final decision on portable instrumentation (EBAMs) should be made after considering current plans to place fixed instruments in the basin. The participants of the Working Group have agreed to this concept in principle, and have started a review of prospective air monitoring sites.
2. **Web Cams:** Recommend the Lake Tahoe Area Air Quality Working Group initiate a review of existing web cam coverage in the basin and develop a plan to supplement the existing government and commercial network in order to gain adequate coverage. Web cams provide fire and air quality staff with opportunities to observe smoke behavior and evaluate transport/dispersion. A visual confirmation of smoke dispersion on a given day with marginal air quality conditions can provide greater confidence in making favorable burn decisions. In the Southern Sierra, a network of web cams has been used with much success. This inexpensive effort relies on existing microwave systems to transmit images to a dedicated server. Web cams can also serve as virtual lookouts. The Southern Sierra effort is a cooperative venture between the U.S. Forest Service and National Park Service. The images can be seen at website: <http://sierrafire.cr.usgs.gov/swfrs/> under "real time".
3. **Smoke modeling via BlueSky / CANSAC:** Recommend the California and Nevada Smoke and Air Committee (CANSAC) evaluate the specific needs associated with providing the Lake Tahoe Basin with BlueSky smoke modeling and MM5 weather forecasts with a special high

resolution domain for the Basin. MM5 is a Mesoscale Meteorological Model ver. 5 developed to address small scale meteorology features. To support this recommendation the CANSAC Board of Directors should develop the implementation proposal, for California in consultation with the working group.

CANSAC members as of June 2007 includes:

- USDA Forest Service Region 5
- USDA Forest Service Pacific Southwest Research Station
- Bureau of Land Management California
- Bureau of Land Management Nevada
- National Park Service
- U.S. Fish and Wildlife Service
- California Air Resources Board
- CALFIRE
- Los Angeles County Fire Department
- San Joaquin Valley Unified Air Pollution Control District

Currently, the operational advisory group of CANSAC is investigating a prototype for the Lake Tahoe Basin.

- 4. Prescribed Fire Information Reporting System (PFIRS):** The Prescribed Fire Information Reporting System (PFIRS) is under the management of the California Air Resources Board (CARB). PFIRS is near completion of what is called Phase I and is undergoing beta testing by Land Managers and Air Quality Agencies in the Lake Tahoe Basin. Nevada has agreed to use PFIRS on a trial basis for evaluation purposes. To fully benefit PFIRS and Blue Sky capabilities, PFIRS data will need to be linked to the Blue Sky products to assist in smoke dispersion forecasting for air quality and smoke modeling. Currently, land managers and air regulators in both California and Nevada have agreed to use PFIRS. The CANSAC Board of Directors and CARB should ensure that these programs are brought together. These efforts should be coordinated with the Lake Tahoe Area Air Quality Working Group.
- 5. Meteorological tools:** Recommend the Lake Tahoe Area Air Quality Working Group evaluate the current meteorological resources in the Basin to establish whether further resources are needed for prescribed fire activities, including the designation of California burn days. The Working Group will propose equipment with data that can provide finer scale forecasting with the objective of adding better and possibly additional California burn day opportunities. Meteorological resources include wind profilers (for vertical atmospheric information), remote automated weather stations (i.e. RAWS, on the ground weather) and aircraft soundings (to assess lower atmospheric stability, and detect atmospheric inversions, if present). Information gleaned by this equipment will not only benefit those that are required to burn on California burn days but those in Nevada where burn day designations are not in use.

6. **Common Website for Dissemination of Information from the Technical Tools:** While each of the technical tools alone will assist in better information for conducting prescribed fire activities, it is important to tie them in on one common website. In the Southern Sierra, the USFS, BLM and NPS all cooperate on a common website that integrates air quality data and webcams. The Working Group recommends and would provide oversight for the development and design of such a website that would incorporate all of the necessary information for decision-making. The website could be linked to the USFS site at <http://www.satguard.com/usfs4/fleet.aspx/>.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- **Cost -- Real Time Smoke / PM2.5 Monitoring:** Capital 1st year cost of approximately \$200,000 (for 3 BAM 1020s, and 3 EBAMs with satellite modems) and \$160,000 in annual recurring costs for maintenance and data management. This does not include monitors currently in place. **Web Cams:** Microwave camera systems are approximately \$2,500 per unit with the system requiring multiple units at each site for adequate coverage. Pan/Tilt systems cost approximately \$28,000 per unit. **Smoke Modeling:** Adequate support for hardware upgrades and operational needs specifically for Lake Tahoe need to be evaluated by the CANSAC Board of Directors. **PFIRS:** CARB staff time on programming and coordinating the linkage between PFIRS and Blue Sky. **Meteorological Tools:** The cost depends on the needs as determined by the Lake Tahoe Area Air Quality Working Group. **Common Website:** Unknown cost for web design and maintenance of a website.
- **Funding source –** Collaborative support for each of these technical recommendations can be explored by existing interagency groups.
- **Staffing –** The real time smoke / PM 2.5 task will require the addition of a dedicated monitoring technician. This technician could also serve maintenance of the web cams and met stations.
- **Existing regulations and/or laws –** In California, Title 17 of the California Code of Regulations Subchapter 2. Smoke Management Guidelines for Agricultural and Prescribed Burning. Interim Air Quality Policy on Wildlands and Prescribed Fires³⁷ published by the EPA on April 23, 1998, US EPA Exceptional Event Rule, published 2007. Both of the Nevada's smoke management programs are implemented through memoranda of understanding between land managers and the respective air agency with jurisdiction.

Analysis of impacts on the following factors is OPTIONAL:

- **Operational –** Some risk in assuming these technologies will increase the number of California burn days. Experience suggests that it will favor additional California burn days and provide meteorological information for Nevada.
- **Social –** Monitoring will provide more precise information regarding public exposure to smoke. The use of the instrumentation in wildfire events, including the RAWS used for Fire Weather forecasting, and the webcams for smoke monitoring, will also give valuable information related to public impacts.
- **Political –** Continued coordination and collaboration with all the land managers and air quality regulators in the Tahoe Basin in order to work together to conduct prescribed fire activities while protecting public health.

- Policy – Good public policy for agencies involved in prescribed fire activities to make every effort to manage public land in balance with public health.
- Health and Safety – The recommended technical tools are essential in using the best available information in balancing public health, air quality and public safety as it relates to smoke, wildfire, and fuels issues.
- Environmental – These technologies are aimed at striking a balance in three very important environmental values: air quality, climate change and forest health. Additionally, the recommendations could also benefit regulators addressing atmospheric deposition of particles and nutrients to Lake Tahoe.
- Interagency – Implementation of these recommendations can all be accomplished through existing interagency working groups, thereby strengthening the cohesion, collaboration and cooperation of the existing groups.



Christy Daugherty

Prescribed burn for fuels management

Finding 27

There are not enough available burn days to accomplish hazard fuel reduction in the Lake Tahoe Basin in a timely manner. Atmospheric conditions and air quality determine the amount of burning that can take place on a given day without adverse impacts to air quality. If not carefully managed, smoke can result in human health impacts that may range from a minor nuisance to serious health effects.

Background and Supporting Evidence:

1. On the California portion of the Lake Tahoe Air Basin, the California Air Resources Board (CARB) oversees a collaborative smoke management program in which state and local air quality agencies work together with land managers to match prescribed burning and other open burning activities with appropriate atmospheric conditions in order to minimize smoke impacts and protect public health. CARB meteorologists utilize specific criteria such as mixing heights and wind speeds in conjunction with air quality data to determine the daily agricultural burn day status for the basin. In the State of Nevada, meteorological forecasting is not conducted by the Air Quality Agencies since burning is not prohibited on any day.

The current criteria for the Lake Tahoe Air Basin, outlined in Title 17 of the California Code of Regulations (CCR), were adopted by the Air Resources Board in 1977. Over the last 10 years, the annual percentage of permissive burn days has ranged from 41% to 71%. In recent years, CARB has incorporated additional meteorological information into the forecasting process, which allowed the implementation of marginal burn days during which the burning of smaller amounts of material is allowed when the likelihood of creating a smoke nuisance is minimal. Since 2002, the average number of permissive burn days has increased by more than 10%, and more than 15% over the most recent three-year period.

The CARB can develop test programs to evaluate different scenarios (such as using the Mountain Counties Air Basin criteria or developing an acreage allocation system) to determine possible changes to the program that may result in increased burning opportunities while protecting public health.

2. Currently, if the meteorological conditions warrant changes, CARB can revise the burn day decision from no burn to a burn day on a case by case basis. Further, a change of burn day status can be prompted by a request from an air district or a land manager, or by CARB's own analysis of the meteorological conditions. "Success" in prescribed burning always includes smoke management, in addition to safety, effectiveness and other criteria.

3. Placer County has a policy of designating all federal holidays as no burn days, regardless of the CARB burn day designation. This provides the public with a smoke free environment when many are enjoying outdoor and family time.

4. Marginal burn days have not always been as available for prescribed burning in El Dorado County as it has been in Placer County.

Recommendation(s):

The following recommendations address information in the respective numbered items in Background and Supporting Evidence:

1. The California Air Resources Board will develop and implement a test program, by March 1, 2008, to evaluate alternate burn day criteria, to see if additional burn days can be added in the Lake Tahoe Air Basin without adverse effects on the region's air quality. A subgroup of the Lake Tahoe Area Air Quality Working Group will work with CARB to assist in identifying and/or developing the test criteria.
2. The California Air Resources Board and local Air Pollution Control Districts should consider permitting more prescribed burning ahead of good dispersal conditions by declaring and permitting more "marginal burn days with improving conditions" the day before the arrival of a weather system.
3. Placer County APCD and land managers can work together to allow a prescribed burn on a federal holiday, if it is a CARB permissive burn day.
4. El Dorado County AQMD will allow burning on marginal burn days similarly to Placer County APCD (This is already occurring.).
5. The California Air Resources Board will conduct a feasibility study as part of their test program to allow implementing agencies in the Lake Tahoe Basin to consider the daily burn day status as information only, and to use available information on conditions to decide when to burn, consistent with air quality objectives, which has proven successful on the Nevada side of the Basin. If the CARB finds feasibility, a change in CARB regulations may be required.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost: No direct capital costs will be incurred. Indirect costs will result from the staff time spent developing the test criteria and coordinating with other agencies.
- Funding source: Involved agencies operating budgets.
- Staffing: There are no specific requirements for new staff. However, development of the test criteria and coordination between the agencies may require a substantial time commitment from current staff in all the involved agencies.
- Existing regulations and/or laws: Title 17, California Code of Regulations Subchapter 2. Smoke Management Guidelines for Agricultural and Prescribed Burning.

Analysis of impacts on the following factors is OPTIONAL:

- Interagency: Development of the test criteria will require participation from multiple agencies involved in land management and environmental protection

Finding 28

Currently, there is no single source or site that offers comprehensive public information about fuels treatment, prescribed burning, smoke management, and public health for the Lake Tahoe Basin.

Background and Supporting Evidence:

Residential communities in the Lake Tahoe Basin, by virtue of their location in the wildland/urban interface, are especially vulnerable to the effects of catastrophic wildfires. While there are numerous ways to reduce fuels, prescribed fire is an important tool used to maintain healthy ecosystems. If not carefully managed, smoke can be a nuisance and create unintended impacts to residents and businesses thereby adversely impacting the community's health.

Smoke from prescribed fire is produced in lesser quantities than from a wildfire. It can contribute to levels of pollution that exceed protective health based air quality standards, i.e. the creation of fine particles and gases.

Many federal, state, and local agencies have created limited publications and websites that provide the public with information on fuels treatment, prescribed burning, smoke management, and their effects on public health. There is no centralized location where information can be easily accessed to educate, inform, and involve residents and visitors in the Lake Tahoe Basin.

Recommendation(s):

A sub-committee of the Lake Tahoe Area Air Quality Working Group should develop suitable public information products (accounting for different values, expectations, and level of local knowledge between visitors and residents) to be used by all land managers and air quality agencies in the Basin to educate the public on fuels treatment, prescribed burning, smoke management, and public health.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost: Staff from air and land management agencies can put together the information necessary for public information products. There may be some future costs associated with advertisement and dispersal of the information to residents and visitors.
- Funding source: Solicit from benefiting agencies.
- Staffing: No additional staff, however additional time from existing staff work programs would be needed.
- Existing regulations and/or laws: N/A

Analysis of impacts on the following factors is OPTIONAL:

- Social - With improved understanding of the need for and benefits of prescribed fire and better information about prescribed fire activities, it is expected that social open-mindedness and support for prescribed burning will increase. Those visiting the Tahoe Basin will have one location to find valuable information that many affect their visit.

Finding 29

Air quality management agencies in Nevada do not regulate burn and no burn days, rather it is left to the land managers' discretion to ignite prescribed fires only when conditions are acceptable. This allows land managers greater flexibility to effectively and efficiently reduce forest fuels within their jurisdictions.

Background and Supporting Evidence:

In Nevada, the Washoe County Air Quality Management Division (WCAQMD) is responsible for air quality management in that portion of the Tahoe Basin within Washoe County, while the Nevada Division of Environmental Protection (NDEP) has jurisdiction over the remaining area comprised of Carson City and Douglas County. Both of these agencies implement similar EPA approved Smoke Management Programs with compliance garnered through a Memorandum of Understanding (MOU) entered into with the primary land management agencies in the Tahoe Basin. In accordance with provisions specified in the MOUs, land managers must apply for a burn permit from the applicable regulatory agency for prescribed burning projects. Submittal of an accompanying smoke management plan may also be required, depending on the size of the prescribed fire and the distance to air quality non-attainment areas. Permits are then issued by the air regulatory agencies. Unlike in California, under Nevada's system, burn day forecasts are not issued. Rather, it is incumbent upon the land managers to ensure that meteorological conditions are favorable, from an air quality perspective, prior to ignition of the prescribed burn.

The Smoke Management Programs have been in effect for at least 10 years. Air quality monitoring data has been collected from stations in Nevada on the southeast (Stateline and Cave Rock) and northeast shore (Incline Village) of Lake Tahoe since 1990. Currently only ozone is monitored at the Incline Site but over the years CO, PM10 (continuous and manual), PM2.5 (manual), and NOx have been monitored on a limited basis. Incline has historically been WCAQMD's cleanest site and has not detected violations of the National Ambient Air Quality Standards. Additionally, smoke complaints received from nearby residents are minimal each burn season and agencies conducting the burns have been found to respond quickly and address the issue.

Recommendation:

Based on an analysis of the Finding, the following recommendation should be made to the Governors: The air quality agencies and land managers in Nevada should continue to follow the same prescribed burning practices that are currently in place; and in the application of their Smoke Management Programs should consider all available sources of information in order to make better-informed decisions. The WCAQMD and NDEP should also continue to participate in basin-wide efforts to better understand air quality and meteorological conditions in the Basin which will lead to the development of more useful technology to assist prescribed fire decision makers.

Impacts of Implementation: Implementation of this "no action" recommendation is not expected to result in impacts in terms of cost, funding source, staffing, or existing laws and regulations. No impacts are foreseen for the environment or on residents or businesses in the Tahoe Basin.

Finding 30

The utilization of temporary access roads for mechanized harvesting equipment in the Lake Tahoe Basin is critically necessary to reduce the risk of catastrophic wildfires, to protect lives, property and the unique environment of the Lake Tahoe Basin, and to improve the health of its forests.

Background and Supporting Evidence:

The continued degradation of forest health in the Lake Tahoe Basin and a corresponding extensive build up of highly flammable fuel positions the Basin for future catastrophic wildfires. While ongoing efforts to address the situation are commendable, the magnitude of the problem far exceeds current capabilities. Much of the biomass to be removed from the Lake Tahoe Basin and is not in the proximity of the existing road system and the physical capabilities of hand crew's on foot. Current erosion control and hydrologic technologies when properly implemented, maintained and monitored will prevent impacts to water quality. Reclamation of temporary access roads would potentially have some minimal short term aesthetic impacts, but the long term forest health benefits and the reduced risk of catastrophic wildfire far exceed short term concerns.

Lake Tahoe regulatory agencies state that the construction of temporary access roads is "technically allowable" under current codes and regulations. In reality a "functional prohibition" exists regarding temporary access roads and the use of mechanized equipment as currently managed by the regulatory agencies. It is simply impossible to address the magnitude of the forest health and fuels problems with hand crews and pile burning. Pile burning has associated impacts to air quality and with a limited number of "burn days" numerous piles are waiting to be burned adding further to the potential for catastrophic wildfire.

A well planned, rapid and efficient approach to implementing forest health and fuel reduction projects through temporary roads and mechanized equipment use that mitigates potential environmental impacts is necessary. Continuation of current practices and regulations will perpetuate the degradation of Lake Tahoe Basin forests and the high risk for catastrophic wildfire.

Recommendation(s)

1. It is recommended that the Governors of the State of Nevada and California direct the TRPA, Lahontan Regional Water Quality Control Board and other Lake Tahoe Basin regulatory agencies to conduct a review and revision of Lake Tahoe Basin federal, state and local regulations and facilitate the necessary revisions, as appropriate to fully implement the use of temporary access roads and mechanized equipment to expedite forest health and fuel reduction projects for the expressed purpose of reducing the risk of catastrophic wildfire.

2. In an effort to minimize soil erosion and potential impacts to water quality, a project specific plan shall be developed to include the design, construction, operation and ultimate reclamation of temporary access roads. Appropriate Best Management Practices, (BMP's), shall be included in the project plan consistent with Nevada and California Forest Practices Act, revised statutes, TRPA best management practices (BMPs), and applicable federal land management guidance documents.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):



Christy Daugherty

“Cut-to-length” equipment in stand with heavy fuel loads

- Cost: None. Change in regulations, policy and procedures through TRPA code review and revision.
- Funding Source: N/A
- Staffing: Utilize existing staffing
- Existing regulations or laws: N/A

Finding 31

The Lake Tahoe Water Quality 208 Plan as adopted in 1988 increases the cost and reduces the effectiveness of fuels treatments because machine operations in SEZs are prohibited.

Background and Supporting Evidence:

One example includes “over the snow conditions”. Temperatures and snowfall are unpredictable at lake level. Applied to fuels treatments, this prescriptive language has led to a proliferation of exemptions, waivers, and project requirements by Lahontan Regional Water Quality Control Board (LRWQCB) resulting in many proposed fuel reduction projects being abandoned because of unwarranted cost of money and time.

Agency personnel and field practitioners involved with preparing and managing fuel reduction and forest health projects have stated that permitting times and requirements, and therefore costs, are higher in California compared to Nevada. The root problem stems from the layering of regulatory processes in California having both Tahoe Regional Planning Agency (TRPA) and the LRWQCB involved in permitting projects when SEZs and slopes over 30 percent are involved. In Nevada TRPA is the single regulatory agency for permitting work under the Lake Tahoe 208 Water Quality Plan which encompasses the entire Tahoe Basin Watershed.

SEZs (wetland and secondary SEZs) are described in the 208 Plan and there has been testimony to the Wildland Fuels Committee that the SEZ indicators (soil, vegetation, moisture content etc) will be updated. TRPA is more effective than the LRWQCB for developing and interpreting regulations because they are a multi-disciplinary agency that considers all of the environmental consequences of their decisions. The LRWQCB is narrowly focused on water quality issues in one state and rarely considers all of the environmental consequences of its decisions. The updating of the 208 plan creates opportunities to eliminate the prescriptive “over the snow” requirement, to design requirements to specifically allow use of mechanized equipment designed for low impact operation on sensitive soils, and to codify BMP requirements specifically designed for wildland fuels, forest health and watershed restoration projects.

Recommendations:

1. It is recommended that the Governors of the State of Nevada and California direct TRPA to take the action necessary to allow the use of mechanized equipment to remove fuels in SEZs, which should include, if necessary, revising their Lake Tahoe 208 Water Quality Plan’s section for mechanical work within SEZs. Suggested language is: “Work within SEZs shall be limited to either mechanized equipment designed for low impact in sensitive soils when soils are stable, or when snow depth is adequate for over the snow removal. This provision applies to wildland fuel reduction, forest health, and watershed restoration projects.”

2. It is further recommended that the Governor of California direct the State Water Board, when ratifying this change to the 208 Plan, to assure that all permitting is vested only with TRPA for the above purposes within the SEZs, bringing consistency with current project permitting in the State of Nevada.

Impacts of Implementation

- Cost: There will be substantial savings to the LRWQCB and to agency staffs by eliminating the current layering of permitting processes in California.
- Funding source: None required. The revision of the 208 Plan is anticipated by TRPA and State staffs to accommodate updated information for SEZ identifiers.
- Staffing: Existing staffs for TRPA and responsible state agencies would handle the revision process.
- Existing regulations or laws: Revision of the 208 Plan is provided in the authorizing legislation for the Clean Water Act. The TRPA has been delegated the responsibility to prepare and revise the 208 Plan with State ratification.



US Forest Service

One form of mechanized tree removal using a grapple skidder

Finding 32

Many critically needed fuel reduction projects located in stream environment zones (SEZs) require the use of mechanical equipment in order to be completed. However, existing regulatory permitting procedures and restrictions on the use of such mechanized equipment in SEZs are impediments to fuels removal projects in such areas. Fuels removal projects in SEZs can be effectively accomplished using mechanized equipment and ground protection techniques of a kind and in a manner that will adequately mitigate short-term soils compaction and disturbance, thereby reducing negative water quality impacts from such activities. Completion of these projects, to the extent made possible by the capabilities and efficiencies of readily available mechanized equipment, will provide long-term protection of water quality from the effects of catastrophic fire affecting large areas of the Tahoe Basin than would be possible if such readily available mechanized equipment is continued to not be permitted to be used in the SEZs.

Background and Supporting Evidence:

SEZs in the Lake Tahoe Basin pose both extreme fire risks and extraordinary environmental challenges. In times of fire, such as both the Pioneer Fire and the Angora Fire, the fires quickly changed from surface fires to crown fires because untreated SEZs allowed fire to quickly move through overstocked and insect diseased forested areas. Commentators have referred to the SEZs in these areas as operating like “candle wicks” during times of fire, advancing the severity of crown fires. SEZs are also pathways through which sediment travels into the Lake, thereby directly affecting Lake clarity.

Removal of fuels from and restoration of SEZs is necessary in order to reduce fire hazards, particularly in SEZs located within or leading into or out of communities, and within the Wildland Urban Interface (WUI) surrounding such communities. For example, in Lake Valley Fire District the fuel reduction treatment needed in SEZs comprise over 40% of the project area. Unless such efforts are quickly undertaken, the SEZs will continue to pose significant and unacceptable fire risks to communities in the Lake Tahoe Basin.

Protection of the Lake’s clarity should continue as one of TRPA’s top priorities, but it is not and should not be the only priority of the TRPA and the potentially devastating impacts of catastrophic fire on the clarity of the Lake’s water should not be overlooked by the TRPA and other agencies having jurisdiction over environmental matters affecting the Tahoe Basin. Protection of life and property from catastrophic fire is and should be of greater priority to the TRPA and other agencies having jurisdiction over environmental matters within the Lake Tahoe Basin. Further, given the fire hazards posed to communities within the Basin by untreated SEZs, there are substantial and unnecessary risks posed by fire within and surrounding the populated areas within the Basin.

In the past, many fuel reduction projects contained within SEZs have either not been performed due to regulatory restrictions on the use of mechanized equipment or were required to be performed by hand, leaving burn piles in areas immediately adjacent to the SEZ for future elimination. Many areas needing fuel reduction treatments were simply not treated because hand-thinning methods were either unsafe or too expensive, or were not feasible due to the sizes of the trees needing removal. Many burn piles of accumulated fuel materials have been left unattended adjacent to SEZs because of restrictions on the use of vehicles and readily available fuels treatment equipment. The need to carry burn pile materials out, as opposed to burning them in place, has been a further cost prohibitive issue for projects in SEZs.

Even though Lahontan Regional Water Quality Control Board (LRWQCB) regulations have allowed limited exemptions for use of equipment in SEZs since 1994, only 4 projects have been brought before the LRWQCB Board for action. The reason for so few projects is that all were pilot projects, and the conditions for use of innovative technology vehicles acceptable to the LRWQCB have proven to be so

cost prohibitive as to amount to a prohibition of any vehicles within SEZs. In testimony, the LRWQCB staff has stated that they “weren’t willing to challenge themselves with more difficult equipment use projects.” Specifically, they would not take the time to define “innovative technology” vehicles and/or were unwilling to accept project proponent arguments that existing, proven, low impact equipment met the LRWQCB requirement as being innovative.

Similarly, there are no quantitative measures or BMP’s to address the vague codified requirements of “significant soil disturbance”, “sufficiently dry” or “minimize compaction” leaving project implementers with great uncertainty in designing project implementation and monitoring requirements. Several proponents of SEZ treatment projects have indicated that they were informed by the LRWQCB staff that their projects would not be permitted under timber waiver procedures. Discussions with proponents indicate that this dialogue has resulted in at least 50 SEZ clearance projects being dropped or simply not pursued. A minor 23-acre USFS pilot project required over a year and a half of negotiations before being approved. The LRWQCB applies the standard of “no permanent soil disturbance” in analyzing requests for SEZ treatment projects, while arbitrarily interpreting the word “permanent” as constituting an impact that is of “less than a year” in duration. The word “permanent”, by any common definition, means something that is perpetual, constant, unchanging, and everlasting. Such subjective interpretations by the LRWQCB of terms that are seemingly quite clear by common definition, have resulted in misunderstandings and confusion by the public and those who must comply with such apparently subjective standards.

In fact, very few projects have been approved that allow for the use of vehicles and equipment in SEZs due to complexities and delays in the permitting process and the lack of availability of low impact equipment meeting the restrictive standards applied by the LRWQCB and/or TRPA. Private fuels removal contractors are generally unwilling to undertake SEZ clearance projects due to the complexities and delays in the permitting process and the inconsistent and subjective interpretations of standards that must followed within SEZs.

Recommendation(s)

Recommendation 1: Until the risk of catastrophic fire is significantly reduced or eliminated in the Tahoe Basin, the Governors of the States of California and Nevada should direct their respective state agencies having jurisdiction in the Basin to consider fire hazard reduction an overriding priority when considering applications for use of mechanized equipment for hazardous fuel reduction projects.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost: Expected to reduce average cost/acre for work, but analysis is needed.
- Funding source: Existing fuel reduction funding sources.
- Staffing: Existing project planning and management staffing, with work probably made easier by ability to use equipment instead of managing manual treatment and burn piles.
- Existing regulations and/or laws: Modified based on finding and actions of Governors.

Finding 33

The Lahontan Regional Water Quality Control Board has interpreted their regulations to prohibit pile burning in stream environment zones (SEZs). The spreading of chips in SEZs has also been prohibited in most circumstances. This interpretation of the rules creates operational burdens by requiring all material to be removed from the SEZs for disposal.

Background and Supporting Evidence:

Due to restrictions on equipment use in SEZs, material is generally removed from these areas using hand crews. Once material is removed from a SEZ by hand, it is either piled and burned or chipped. Due to restrictions regarding the spreading of chips in SEZs, chips must be spread in a non-SEZ area or removed from the site. Chips removed from SEZs must be transported to designated locations for disposal. There is presently a lack of disposal sites in some areas of the Basin.

Crew safety issues arise due to the difficulty of lifting heavy rounds and slash and moving this material to an accessible point outside the SEZ. Due to human physical limitations, large material cannot be removed using hand crews. This can create difficulty in meeting fuel treatment objectives. The use of hand crews to remove material from SEZs for disposal creates many operational and safety challenges and has proven to be costly and time consuming.

Most if not all SEZs within the Tahoe Basin have historically burned in the past, including the use of pile burning. There is no documented evidence of permanent adverse impacts from fuel reduction related pile burning in SEZs. There is no documented evidence that soils burned during pile burning operations no longer support native vegetative growth. Pile burning exposes a small percentage of the total land area to the effects of burning. If necessary, potential impacts of burning can be easily mitigated by pile placement, hydrophobic soil disturbance with shovels, etc.

There is no documented evidence of permanent adverse impacts from the spreading chips in SEZs within the Tahoe Basin.

Recommendation:

The Lahontan Regional Water Quality Control Board should change their interpretation of their regulations to allow pile burning and the spreading of chipped material in SEZs.

Impacts of Implementation:

REQUIRED analysis of impacts on the following factors:

- Cost – reduce operational costs to land managers by eliminating the need to remove slash/debris from stream environment zones for disposal.
- Funding source – none
- Staffing – increase crew efficiency by eliminating the need to remove slash/debris from stream environment zones for disposal.
- Existing regulations and/or laws - expands interpretation of present laws.

OPTIONAL analysis of impacts:

- Operational – eliminates the need to remove all slash/debris from stream environment zones for disposal.
- Social – none
- Political – positive political demonstration of common sense by a regulatory agency.
- Policy – none
- Health and Safety -reduces the potential for crew injuries resulting from carrying large amounts of wood material out of stream environment zones.
- Environmental – encourages fuel reduction projects in stream environment zones so as to prevent catastrophic wildfires such as the Angora Fire.
- Interagency - none

Finding 34

One of the limiting factors for adequate, timely and cost effective forest treatment in the Lake Tahoe Basin is the lack of adequate data on the impacts of mechanized and other types of forest thinning on water quality and soil health. Regulatory agencies apply a range of restrictions because of limited local data relative to those practices. Implementation agencies, landowners and other entities implement a broad range of practices without understanding the full environmental implications of doing so. This situation has, in many cases led to stalemates, stalled projects and strained relationships when in fact, most of the stakeholders involved in forest health and fuel reduction practices are aiming for similar goals.

Background and Supporting Evidence:

In 1999, a group of individuals interested in improving erosion control practices in ski resorts began a process that has led to the California Alpine Resort Environmental Cooperative, which has produced the Sediment Source Control Handbook (draft, final document in 2008) <http://www.swrcb.ca.gov/rwqcb6/cerec.html>. This effort is based on finding common solutions through a collaborative process, using a science-based approach to do so, following an adaptive management process and using a broad range of field plots and direct measurements to test specific hypotheses.

A great deal of discussion has taken place about which forest clearing/fire reduction strategies are the most effective and what relative effect each has on water quality. During preparation of the Tahoe TMDL Document for Forest Uplands (Drake, Grismer and Hogan, in review), it became apparent that very little actual research has been done on forest thinning practices currently in use or suggested for the Lake Tahoe region (see http://calag.ucop.edu/0602AMj/pdfs/5_Mastication.pdf). Parallel to these discussions, a great deal of concern exists regarding regulatory agency standards for accepting some of those strategies, especially regarding heavy equipment. This concern centers around the impacts that heavy equipment may have on soil compaction and thus water quality. Land managers and regulatory agency personnel must begin to test, measure and develop a better understanding of a variety of forest thinning tools.

Recommendation(s)

The Commission recommends land managers and regulatory personnel develop a Handbook of Forestry Practices for the Lake Tahoe Basin. This effort shall be based on finding common solutions through a collaborative process, using a science-based approach, following adaptive management, and using a broad range of field plots and direct measurements to test specific hypotheses. The process for developing the Handbook will be narrowly focused, relying on existing information including existing literature. The initial process shall build upon what is known. Updates will be made as lessons are learned and new scientific information becomes available. The Handbook of Forestry Practices shall not become regulation and shall not limit land managers from proposing new practices. The development process of the Handbook of Forestry shall consider USFS Standards and Guidelines and California and Nevada's Forest Practice Rules. Most importantly, the Handbook process shall unite the agencies in utilizing the science and practices necessary to complete fuel reduction projects in the Basin.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost - \$150,000 for the initial year. Additional funding may be necessary to manage the process.
- Funding source – mix of federal, state and private dollars.
- Staffing – Federal, state and local land managers and regulators.

Finding 35

The current system in place to monitor the implementation of fuel reduction projects places an undue burden on the individual contractors and non-federal entities that implement the projects.

Background and Supporting Evidence:

Fuels treatment projects have been conclusively demonstrated to reduce the fire severity of wildfires including the Angora Fire (USDA 2007). Monitoring the implementation and effectiveness of fuels treatment projects in the Tahoe basin is an important activity that will assess the implementation and effectiveness of treatments and so allow for adaptive management. Monitoring is also important to assure stakeholders and funders that allocated funds are well spent.

However, many small entities such as Fire Safe Councils and fire departments do not have staff qualified to undertake more complex types of data collection such as instream water quality monitoring. These additional monitoring requirements impede project implementation by taking up staff time and reducing the number of projects that may be undertaken. The application of adaptive management science to protect the Tahoe Basin environment is jeopardized when complex monitoring data collection responsibilities are not placed on those most qualified to conduct them.

- a. There exist three basic kinds of monitoring:
 1. Implementation monitoring - verifying that fuels treatment projects have been implemented as designed and that they meet project approval conditions.
 2. Effectiveness monitoring - verifying that projects have successfully met their objectives including reducing fuel loads and protecting water quality.
 3. Validation monitoring - verifying that the successfully carried out fuels treatment projects actually reduce fire risk and moderate fire behavior as desired.
- b. Implementation monitoring is an activity currently carried out by all implementers who carry out fuels treatment projects through the contract administration process.
- c. The way that effectiveness and validation monitoring are currently carried out is cumbersome and a barrier to project implementation. Some non-federal project implementers are currently required to collect complex effectiveness and/or validation monitoring data which creates numerous practical problems including:
 1. Funding problems, because monitoring extends beyond project grant cycles.
 2. Workload problems, extending continuing attention to otherwise-completed projects competing with the capacity to implement new projects.
 3. Expertise problems, in that project implementers are not trained to do the technical work that some more complex monitoring protocols require. Although substantial monitoring data has been obtained, it has seldom (if ever) been evaluated or summarized to determine its utility.

Recommendation(s)

Request that agencies involved in permitting fire risk reduction projects for non-federal entities (state agencies, local fire districts, and fire safe councils) assume responsibility for effectiveness and validation monitoring permit requirements.

Request that agencies involved in implementing be responsible for implementation monitoring.

Request that agencies involved in permitting to assist non-federal entities in developing the organizational capacity to carry out permit requirements for performance of implementation monitoring.

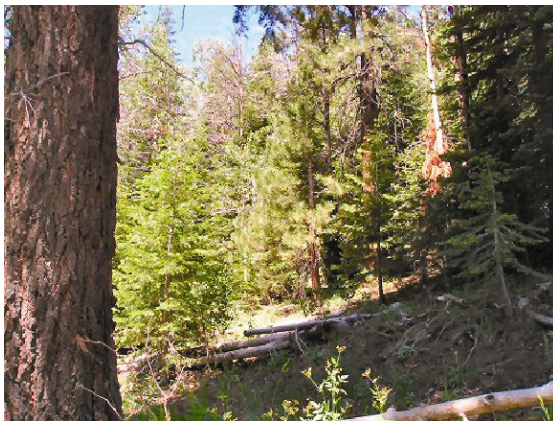
Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost: Unknown, depends on the how the monitoring program is organized.
- Funding source: Redirect existing project funds spent on monitoring, depending on funding source. Possible added funds where funding sources don't allow.
- Staffing: Use existing staffs, or add with funding provided through projects.
- Existing regulations/laws: Would comply with existing project approval conditions, but improve adaptive management by improving effectiveness monitoring.

Reference:

USDA, 2007. An Assessment of Fuel Treatment Effects on Fire Behavior, Suppression Effectiveness, and Structure Ignition on the Angora Fire. US Department of Agriculture, Forest Service, R5-TP-025.



Tahoe Regional Planning Agency

Aspen stand before treatment (left) and after treatment (right)

Finding 36

Currently under California Public Resources Code, Professional Foresters Licensing Law, the fire services cannot consult with private property owners about mitigating the fire hazard posed by undeveloped urban lots without employing the services of a California Registered Professional Forester.

Background:

Undeveloped lots within the Wildland Urban Interface can support wildland fire within the urban cores of Lake Tahoe communities. The Fire Services of the Lake Tahoe Basin have identified undeveloped lots within urban areas as a significant hazard to life safety and property.

In the Lake Tahoe Basin many small urban lots have been purchased by private individuals and the coverage, as determined by TRPA, is transferred to another lot where the landowner intends to build a home. The result is that there are a large number of undeveloped lots, within urban areas, that harbor significant fire hazards. The landowners do not have an interest in those lots as they are now undevelopable and have no residual value to the landowner.

California Public Resources Code and the Professional Foresters Law thereunder requires a California Registered Professional Forester consult with landowners about reducing fuels on small undeveloped urban lots in cases where the homeowner requests advice. The current interpretation of “devoted to urban uses” in the Professional Foresters Law excludes these small urban lots. There is currently a scarcity of Registered Professional Foresters in the Lake Tahoe Basin and the work of marking trees on small undeveloped urban lots does not fit the typical work that Registered Professional Foresters desire. The net result of the California Public Resources Code’s requirement that Registered Professional Foresters consult with landowners about fuel loading on small undeveloped urban lots has resulted in a lack of fuel reduction work taking place on those lots and this results in an unsafe condition within urban areas.

Recommendation(s):

1. It is recommended that the TRPA identify the privately-owned “small undeveloped urban lots” in the California portion of the Lake Tahoe Basin that can be fairly characterized as “being devoted to urban uses”.
2. Further, it is recommended that privately-owned “small undeveloped urban lot” be defined as an undeveloped lot, within a community and does not constitute a “forested landscape”.
3. Further, it is recommended that the owners of undeveloped urban lots of larger than two acres, in the California portion of the Lake Tahoe Basin, be encouraged to consult a Registered Professional Forester to determine if the sale of timber could help offset the costs of fuels removal and forest management.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED:

- Cost – Staff time of CAL FIRE
- Existing regulations and/or laws – California Professional Foresters law

Finding 37

The level of wildland fire protection on California State Responsibility Area (SRA) is below the basic 24/7 all-risk standard experienced elsewhere in California.

Background and Supporting Evidence:

As a result of the “balance of acres” arrangement between CAL FIRE and the LTBMU, the property owners on the California side of the Lake Tahoe Basin receive services at a level which are lower than the standard elsewhere in California.

In other areas of California, property owners on SRA receive 24/7 all-risk protection by CAL FIRE. In many cases where there is an organized fire protection district, the two agencies cooperate delivering programs including fire prevention and multi-hazard fire and rescue services. The lead on multi-hazard structure fire and rescue services comes from local government and wildland fire protection comes from Cal-Fire.

In many cases local government’s ability to provide statutory mandated services is constrained by the shift of local property tax dollars to the State of California (ERAF). This leaves a reduced ability to participate in 24/7 wildland fire protection.

The LTBMU generally operates in 10-12 hours shifts with after hour response times exceeding that which would otherwise be provided by CAL FIRE. If a vegetation fire occurs after the LTBMU is off shift, local government is relied upon by Cooperative Agreement for initial response. So long as local government is available to assist the arrangement has managed to work over the years. However, should local government not be available, an unacceptable amount of time can occur before initial attack forces arrive on scene of the fire by out of area auto and mutual aid forces.

Our conclusion is the “balance of acres” arrangement between the LTBMU and CAL FIRE is no longer acceptable for the California SRA. Aside from delayed response after hours, ie., a structure fire getting into the wildland, no fire prevention assistance occurs in the enforcement of California PRC 4291.

Recommendation(s):

1 - The State of California should consider reviewing on a permanent basis the level of service on California SRA in the Tahoe Basin and adjusting it on a permanent basis to a level that is comparable elsewhere in California. This could include placing engines on the north and south ends of the Lake 24/7 during declared fire season and instructing those engine companies (and potentially forester positions) to participate in PRC 4291 inspections in cooperation with local government.

Finding 38

No CAL FIRE Fire Station currently exists in the Lake Tahoe Basin.

This report may recommend the stationing of CAL FIRE fire engines in the Lake Tahoe Basin 24 hours per day, seven days per week, during declared fire season. Should it become necessary to construct a new fire station facility to house CAL FIRE fire engines and staff, it is unknown where such a station could be constructed.

Background and Supporting Evidence:

No CAL FIRE fire engines or fire stations are currently located in the Lake Tahoe Basin. During meetings of the Tahoe Basin Fire Commission, the Basin Fire Chiefs have suggested full time staffing of a CAL FIRE fire station during declared fire season. Although there may be part-time space available at existing local fire stations, construction of a new CAL FIRE fire station may become necessary. Potential locations should be identified to initiate a feasibility study.

The best long-term location for a new CAL FIRE fire station may be on state-owned property, if a suitable location can be determined. If a suitable location could be found on State Park property, a collaborative agreement could be formed between CAL FIRE and State Parks. The prescribed fire program on State Parks could benefit greatly from additional resources provided by CAL FIRE.

A CAL FIRE fire station is currently located on State Park property in Southern California on Cuyamaca Rancho State Park. A similar cooperative arrangement has potential in the Lake Tahoe Basin.

Recommendation(s):

Provide state funding for a feasibility study of locating a new CAL FIRE fire station on State Park property or on alternative properties in the Lake Tahoe Basin. With support from a completed feasibility study, provide state funding for the construction of a new CAL FIRE fire station.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- **Cost** Cost to complete a feasibility study should be low if existing CAL FIRE staff is utilized. Cost to construct a new CAL FIRE fire station may be high due to the additional permit requirements in the Lake Tahoe Basin. Long-term costs will be lower if a station is located on state property rather than on private property due to savings in rent.
- **Funding source** California state budget.
- **Staffing** CAL FIRE staffing.
- **Existing regulations and/or laws** A feasibility study should cover existing regulations and/or laws and potential for success.

Finding 39

The temporary placement or permanent stationing of a Forest Service Type 3 engine proximal to the North Shore for shorter wildland fire response times is desirable.

Background and Supporting Evidence:

Since the administrative inception of the Lake Tahoe Management Unit (LTBMU) in 1972 there have been several locations where engines have been stationed throughout the Basin. These areas include William Kent Campground, Stateline Lookout, Bay View, the Estates, Fredrick's, Spooner Summit, and Meyers Work Center. Several of these locations are no longer utilized for several reasons which include structural condition, conversion to recreation or interpretive sites, health and safety concerns and highway access issues.

Currently the Forest Service has four 5-person, 7-day effective Type 3 engines at three stations which are fully staffed during the normal "fire season". Currently, the Forest Service has two engines located in Meyers, one engine in Meeks Bay and one on Spooner Summit. The Unit also has one 20-person suppression crew and a 10-person fuels crew with a tactical water tender and a Type 6 engine located at Meyers Work Center.

Since 2002 discussions regarding the placement of an engine on the North Shore (Tahoe City) and the development of a new fire station in conjunction with the North Tahoe Fire Protection District area have occurred. The continued dialogue has been positive and encouraging. However, there are internal financial issues to resolve regarding lease options and specific space requirements for the Forest Service Engine and Crew. Both could be resolved in a positive manner.

Engine location should be based on geographics, fire history, fire occurrence and ignitions, values to be protected and assessed fire hazard.

Ideally, fire stations would be located on all four shores of Lake Tahoe. Currently three of the four shores of the lake are covered with two of the four fire engines stationed on the South Shore where most of the ignitions have historically occurred.

Recommendation(s):

The Governors request the LTBMU to explore opportunities regarding the joint location of the Fire Protection District and Forest Service engines to improve wildland fire response times on the north shore areas of the Lake Tahoe basin.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost – Cost of a Forest Service "stand alone" two bay station, offices, storage, and infrastructure is estimated at \$1,400,000. Adding to a facility under construction would reduce the overall costs.
- Funding source - unknown at this time. Likely appropriated funds
- Staffing – Not Applicable because existing engine and prevention modules would be relocated to the new location.
- Existing regulations and/or laws – conforms with policy and regulation

Analysis of impacts on the following factors is OPTIONAL:

- Operational – improve operational efficiency and response times to the North Shore Area

Finding 40

Equipping the Nevada Air National Guard in Reno with the Modular Airborne Fire Fighting System would improve wildland firefighting capabilities in the Tahoe Basin.

Background and Supporting Evidence:

The 152 Airlift Wing includes the 192nd Airlift Squadron which flies the C130H. The C130 is a proven airborne firefighting system. Stationed out of the Reno-Tahoe International Airport, the squadron is ideally positioned to provide aerial assets to the Tahoe basin as well as a large portion of the western United States. Beyond the capability of the C130 to deliver retardant, the Reno based C130s are equipped with the infrared surveillance system.

Recommendation(s):

The Governors of California and Nevada should support the equipping of the C130s for the Nevada Air National Guard with the Modular Airborne Fire Fighting System and appropriate equipment.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost: It is not known to this author what costs are associated with the use of the Air Guard C130. It must be assumed that the costs are significantly less even on a per gallon of retardant delivered bases.
- Funding source: In California I assume funding would be through the normal E-Fund which is used for extended attack fires. Funding of the Air Guard assets would operate under the existing system for utilizing Guard, Reserve and Active Duty assets.
- Staffing: Existing state staffing can be used to liaison with the federal assets. This proposal will not require any additional staffing at the state level.
- Existing regulations and/or laws: The existing system for utilizing federal resources would apply to the use of these assets.

Analysis of impacts on the following factors is OPTIONAL:

- Operational: The Nevada C130s would integrate with the fire services just as they have done in the past with the other C130 units.
- Social: No impact
- Political: I assume that there would be some reluctance to introduce a potential negative impact on the California Air Guard unit's use of the MAFFS system. The inclusion of the Nevada Air Guard into the MAFFS delivery system should, however, have no impact on the California unit. Based on recent fire history there will be a need for both Air Wings to provide aerial assets.
- Policy: Unknown
- Health and Safety: This is a proven system for fire suppression. It will provide needed additional resources during those periods of extreme fire activity. The utilization of the Scathe View System can provide a critical asset for enhanced firefighter safety and operational planning.
- Environmental: No adverse Impacts
- Interagency: This proposal will integrate within the existing interagency agreements and operating plans.

Finding 41

Interagency wildfire suppression resources (aircraft, engines, crews, etc.) are currently staffed and available in multiple locations in and around the Lake Tahoe Basin in both California and Nevada. A variety of political and jurisdictional boundaries exist within or adjacent to, the Lake Tahoe Basin including Geographical Area Coordination Centers (GAC's) and Interagency Dispatch Centers which dispatch wildfire suppression resources to reported wildfires. While the fire service has universally adopted the "closest forces" concept to insure the rapid initial attack of all wildfires, jurisdictional boundaries have prevented closest forces being utilized effectively in the Lake Tahoe Basin.

In an effort to improve the initial attack of wildfires in the Lake Tahoe Basin, to protect lives, property and the unique environment of Lake Tahoe, all available wildfire suppression resources should be identified and deployed to reported wildfires in the Lake Tahoe Basin .

Background and Supporting Evidence:

The recognized key to keeping wildfires small is a rapid and strong initial attack capability with aircraft, engines and hand crews. Nevada and California federal, state and local governments maintain a wealth of resources both within and immediately adjacent to the Lake Tahoe Basin. Aircraft, typically helicopters and Single Engine Air Tankers are available at the Minden Airport minutes from the Lake Tahoe Basin.

The GAC's and Dispatch Centers have agreements in place to access each others suppression resources, but operationally "closest forces" is not being utilized as demonstrated in both the Gondola and Angora incidents. Dispatch Centers do not reliably communicate the availability resources or status them for initial attack responses cross boundaries. While attempts have been made in the past to address this issue, the problem remains and a permanent resolution should be implemented rapidly.

Recommendation(s):

It is recommended the Governors of the State of Nevada and California direct that a permanent interagency (federal, state & local) resolution to this dispatching issue be developed and implemented prior to the 2008 wildfire season.

Impacts of Implementation:

- Cost: None. Change in operational protocols, policy and procedures through an interagency agreement.
- Funding Source: N/A
- Staffing: Utilize existing staffing
- Existing regulations or laws: N/A

Finding 42

Interagency communications during wildland fire occurrences is at times delayed and confusing.

Background and Supporting Evidence:

Recent wildland fire responses by Federal, local and state resources has been confusing due in part to the number of dispatch centers. Currently resources are dispatched from :

- East Placer (Tahoe City, CA) – North Tahoe FPD, Meeks Bay FPD
- City of South Lake Tahoe – City of South Lake Tahoe FD, Lake Valley FPD, Fallen Leaf FD
- Incline – North Lake Tahoe FPD
- Douglas County – Tahoe-Douglas FPD
- Sierra Front Interagency Dispatch Center – Nevada Division of Forestry
- West Placer (Grass Valley, CA) – CAL FIRE – Nevada/Yuba/Placer Counties
- Camino Interagency Dispatch Center – Forest Service, CalFire El Dorado/Amador Counties

Agreements between all the agencies are in place whereby upon a dispatch going out from one the Dispatch Centers, That Center, by agreement, will immediately notify the Camino Interagency Dispatch Center who will then serve as the single point for additional dispatches and ordering of additional resources for the wildland fire response.

However, the numerous Dispatch Centers have been less than responsive to these agreements, delaying notification to the Camino Center by as much as several hours. This causes confusion in ordering of additional resources for the fire and confusion as to which agency is responsible for the resource orders associated with the Fire.

Once a wildland fire is responded to, by agreement, all agencies will use the local “Whitefire” radio frequencies for communications while going to and on the fire. Again, this has been an implementation issue.

Recommendation(s):

1. To avoid continued confusion, all Dispatch Centers and responding resources will adhere to the existing agreements, including:

- Immediately notifying the Camino Interagency Dispatch Center of a wildland fire call/dispatch
- Camino will serve as the single (and only) point of ordering resources for the wildland fire response
- The local “Whitefire” radio frequency will be used for all multiagency wildland fire response

2. Through the process of the development of an Annual Operating Plan, all cooperating Agencies and Fire Protection Districts/Departments will continue to develop and utilize agreements for the status of fire fighting resources moving into or through different dispatch areas for the purposes of notification of location and availability for response to an incident.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

- Analysis of impacts on the following factors is REQUIRED (Best Estimate):
- Cost – No Cost for implementation
- Funding source – Not Applicable
- Staffing – no additional staffing needs
- Existing regulations and/or laws – conforms with existing agreements



Gondola Fire in Lake Tahoe Basin from Carson Valley, Nevada, July 2002

Finding 43

Fuel reduction/forest restoration efforts in the Lake Tahoe Basin require consistent funding mechanisms. Land management agencies must be able to plan forest fuel reduction projects on a long-term schedule to reach strategic objectives in the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan* and to generate a sustainable market that will insure reliable contractors are available to work in the Lake Tahoe Basin.

Background and Supporting Evidence:

Much of the funding for fuel reduction/forest restoration efforts in the Lake Tahoe Basin has been generated through the Southern Nevada Public Land Management Act. The Act is not a permanent funding mechanism and requires annual funding requests that compete with non-fire/fuel reduction efforts. Alternative annual funding is needed to provide a continuing, sustainable source that land managers can depend on to implement and maintain these resource management efforts.

Recommendation:

The Fire Commission recommends to the Governors of the States of Nevada and California that they join with congressional representatives and the Executive Branch to amend the Lake Tahoe Restoration Act to provide a line item annual funding source appropriation for Emergency fuel reduction/forest restoration efforts in the Lake Tahoe Basin. The funding request should be at a minimum the amount required to implement the federal share, including work on Federal lands and grants to states and local agencies with appropriate cost share provisions, of the 10 yr plan. These funds will be supplemented by state and local and private sector shares of funds to implement the entire "10-Year Plan".

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost Transfer of existing annual funding provided by the Southern Nevada Public Land Management Act, including Lake Tahoe and White Pine allotments.
- Funding source Annual appropriation through the Lake Tahoe Restoration Act
- Staffing Not determined at this time
- Existing regulations and/or laws No impact on existing regulations and/or laws

Finding 44

Public agencies have proposed to reduce fuel hazards and restore forests on approximately 68,000 acres over the next 10 years at an estimated cost of approximately \$230 million, as more fully set forth in the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan*. The Commission finds that the 10-Year Plan is well done, and should be implemented to the maximum extent possible by the relevant governmental authorities and entities within the Lake Tahoe Basin. It is noted by the Commission that the “10-Year Plan” for fuel reduction projects in the Lake Tahoe Basin is a strategic document and that fuels project locations, treatment prescriptions, and implementation methods may change as tactical plans are developed. Therefore, the Commission’s funding estimates do not purport to address funding needs of all worthwhile fuels projects in the Basin, and additional funding for such projects should be anticipated as such strategies are developed.

In addition to costs identified in the “10-Year Plan”, additional funding will be necessary to accomplish other necessary tasks that have been identified by the Commission to reduce risks and restore the forests of the Basin. These additional costs will have to be borne by all stakeholders within the Basin.

.Recommendation(s)

1. It is recommended that the “10-Year Plan” be adopted and implemented by all appropriate governmental authorities and entities within the Lake Tahoe Basin in collaboration with all land owners and land managers within the Basin.
2. It is recommended that the funding needs identified within the “10-Year Plan” be addressed and provided, as appropriate, by all relevant governmental authorities, land owners, and land managers. The funding needs as set forth in the “10-Year Plan” are recommended as being correct for the projects identified therein, and are set forth in the “Estimated Hazardous Fuels Reduction Costs for the Lake Tahoe Basin”.
3. In addition to the funding necessary for the “10-Year Plan”, it is recommended that the funding needs identified in the schedule attached hereto, additionally be addressed by the respective responsible entities and/or land owners. The funding needs for these additional projects and tasks as set forth in the following schedule:

Impacts of Implementation:

Cost: Please refer to the attached schedules.

Funding Source: Public and private sources.

Staffing: Capacity will have to increase to provide sufficient capacity to implement the proposed projects in the relevant time frames.

The following table is excerpted from the *Multi –Jurisdictional Fuel Reduction and Wildfire Prevention Strategy – 10 Year Plan* (http://www.fs.fed.us/r5/lbmu/documents/fuel-reduction-projects/10-year-plan/LTB_FUELS_PLAN_12_13_2007.pdf) and describes the acres that are currently planned for fuels treatment and the estimated project costs.

Lake Tahoe Basin Fuel Reduction and Wildfire Prevention Strategy 10-Year Plan¹

Cost Item		Acres	Cost
CWPPs² (acres by jurisdiction)	Federal	6,552	\$25,280,736
	California	2,293	\$19,957,600 *
	Nevada	75	\$289,386
	Local	1,150	\$4,437,248
	Private	2,408	\$9,291,211
CWPP Subtotal		12,478	\$59,256,180 *
Community Defense Programs			\$9,983,000
Program Leadership/Staffing			\$43,088,587
LTBMU Other Acres		33,260	\$96, 972, 685
Nevada Other Acres		3,100	\$9,028, 750
Maintenance		18,100	\$10, 283, 842
Total			\$228,613,042 *
*Reflects revised cost estimate for CTC not in original report			

In addition to these 10-Year Plan estimates for fuels treatments, there are additional costs associated with:

Private Homeowner Parcels – There are approximately 40,000 homes in the Tahoe Basin with an average one-time cost to fully comply with defensible space requirements at \$1,500 per parcel. A percentage of these parcels have already created defensible space while others remain to be completed. An additional building/homeowner expense would be the conversion of wood shake roofs to non-combustible roof materials.

Local Government – There is a cost associated with the delivery of public education and defensible space inspection services. Local funding will need to be provided to fire agencies to deliver these necessary services.

¹ *The TRPA Plan projected cost* (Holl 2007)

² CWPP: *Community Wildfire Protection Plans* as defined by the Healthy Forests Restoration Act, 2003

Finding 45

Funding for forest health and fire pre-suppression for the Lake Tahoe Basin is insufficient and inconsistent. In order to protect lives, property and the unique environment of the lake and basin, a long term stable and consistent source of funds must be secured.

Background and Supporting Evidence:

It is widely recognized that the health of the forests in and around the Lake Tahoe basin is poor. Couple this with significant intrusion of homes and businesses into the wildlands and fire presents a significant potential risk to lives, property, water quality and the other natural values present within the basin.

To improve forest health, prescribed fire, forest thinning and biomass removal must be accomplished at a significant cost per acre. This is not a one time event. Ongoing maintenance of the forests must occur on a periodic basis, again at substantial cost.

A variety of sources are currently funding forest health work within the Lake Tahoe Basin. Unfortunately, these funding sources are short term and not consistent over time; just the opposite of what is needed to ensure healthy and sustainable forests. A long term sufficient and consistent source of funding is needed.

Recommendation(s):

It is recommended the Governors of the States of Nevada and California work with their states' respective Congressional delegations to establish an annual sustainable fund for forest health for the Lake Tahoe Basin. A potential funding source is through the Southern Nevada Public Lands Management Act (SNPLMA).

Impacts of Implementation:

Cost: Capitalization of the endowment must be sufficient enough to generate interest to fund yearly health work within the basin without impacting principal

Potential Funding Source: Southern Nevada Public Lands Management Act (SNPLMA)

Staffing: A program administrator (full or part time) may be needed to provide administrative and fiscal oversight of the endowment.

Existing regulations or laws: SNPLMA requirements. Congressional action will be needed to establish the endowment using SMPLMA.

Finding 46

- 1) There is currently inadequate funding for fuel reduction projects in the Lake Tahoe Basin, as identified in the 10-Year Fuel reduction Strategy, and to support defensible space treatments on developed parcels located within the Basin.
- 2) The Southern Nevada Public Lands Management Act (SNPLMA) funding is currently insufficient to fund the 10-Year Fuel reduction Strategy due to slow land sales in Southern Nevada. SNPLMA funding and has fallen well short of the amounts necessary to complete fuel reduction in the Lake Tahoe Basin.
- 3) The States of California, and Nevada and the local jurisdictions within the Lake Tahoe Basin currently invest significant funding into fuel reduction activities in the Basin.
- 4) The U.S. Forest Service, the States of California and Nevada, and the local fire agencies are currently working to diversify their fuel reduction funding portfolios; however the completion of the necessary fuel reduction projects will require a multi-year process and an emergency situation exists today.
- 5) Because an emergency situation exists in the Lake Tahoe Basin, and because the excessive accumulations of forest fuels pose an imminent hazard to life, property and the environment; disaster mitigation funds should be allocated to Lake Tahoe Basin fuel reduction efforts.

Background:

Fuel reduction projects are most effective when located immediately adjacent to communities. In the past, legislation such as the Santini-Burton Act authorized the purchase of urban parcels by the U.S. Forest Service, California Tahoe Conservancy and Nevada State Lands. Additionally, a myriad of small Public Utility Districts and General Improvement Districts currently own land adjacent to communities or were consolidated into larger Public Utility Districts. Similarly, many of the Basin's communities are located within or comprised of planned unit subdivisions and are controlled by homeowner associations. As a result, there is a very complex arrangement of land ownerships around the communities of the Lake Tahoe Basin.

In response to this complex mix of land ownership, the public land managers and local fire agencies have formed a single fuel reduction oversight body and a project implementation team designed to implement projects without regard to jurisdiction. This Multi-Agency Coordinating Group (MAC) oversees the Tahoe Fire and Fuels Team (TFFT), which manages both fuel reduction and defensible space projects. The Lake Tahoe Basin Fire Chiefs are currently formalizing this organization through the formation of a Joint Powers Authority (JPA).

The States, public land managers (excluding the US Forest Service) and local jurisdictions currently invest significant funding to the fuel reduction effort in the Lake Tahoe Basin. These projects are now prioritized and coordinated through the MAC and TFFT.

Present annual expenditures of state and local funds are approximately.

California Tahoe Conservancy	\$1,200,000
California Proposition 40 funds	\$ 760,000
California Prop 84 funds	\$ TBD
California State Parks	\$ 500,000
Nevada State Lands	\$ 100,000
Nevada Division of Forestry	\$ 600,000
North Lake Tahoe Fire	\$ 500,000
North Tahoe Fire	\$ 500,000
Tahoe Douglas Fire	\$ 250,000
South Lake Tahoe Fire	\$ 150,000
Lake Valley Fire	\$ 275,000
Meeks Bay Fire	\$ 75,000
Nevada Fire Safe Council	\$ 300,000
Private contributions	\$1,000,000
Total	\$ 6,210,000/+TBD

*General estimates based on prior expenditures and subject to revision.

These expenditures result in forest fuel reduction on approximately 1500 acres annually, defensible space on approximately 700 parcels, chipping of hazardous fuels from defensible space from over 4000 private properties, organization of 26 community Fire Safe Chapters, and the management of seven 10-person hand crews that thin forests and also serve as fire crews.

This level of effort would likely be sufficient for the long term maintenance of fuel reduction efforts, once the current volume of fuel reduction and defensible space has been addressed. For that purpose, new funding sources from property tax assessments and fees are currently being pursued.

During the term of the current emergency, the communities of the Lake Tahoe Basin must undertake maximum efforts to secure long term funding to support ongoing maintenance. Until the current need for fuel reduction on State, municipal, and private lands is accomplished, the communities of the Lake Tahoe Basin, the environment, and lives of the Basin's residents and guests remain at-risk. Significant and reliable funding is needed to complete fuel reduction projects on state, municipal and private property identified in the 10-Year Fuel reduction Strategy for the Lake Tahoe Basin.

Recommendation(s)

1) There is an immediate pressing need for fuel reduction on state, municipal and private properties totaling over 15,000 acres adjacent to the communities located within the Lake Tahoe Basin as set forth in the 10-Year Plan. Defensible space needs to be created on a substantial number of the approximately 40,000 privately owned parcels within the Basin, and there is a need to dispose of the woody debris that will result from forest fuel reduction and defensible space projects. In order to complete this emergency level of fire and fuel reduction work, it is recommended that the following funding will be necessary over the next 5 years and must be provided by state and/or local sources

including private owners, if not otherwise available from FEMA or other government sources. The funding proposed in this recommendation is intended to be additional and not re-directed from current allocated funds in to the Tahoe Basin. However, the Commission recognizes that it may be necessary to expand existing priorities in order to accommodate the emergency need of reducing the risk of catastrophic fire.

Create fuel break parcel & projects database	\$ 500,000 (one time funds)
Create a defensible space risk database	\$ 500,000 (one time funds)
Subtotal, one time funding required	\$1,000,000
Additional fuel reduction project staff	\$ 450,000 / year
Additional science for sensitive lands treatments	\$ 150,000 / year
Fuel reduction on State, local, private lands	\$5,000,000 / year
Total State, municipal, private forestry¹	\$5,600,000 / year
Additional defensible space inspections	\$ 300,000 / year
Defensible space project coordination	\$ 350,000 / year
Add'l fuels and D-Space database maintenance	\$ 282,000 / year
Add'l homeowner education campaign	\$ 250,000 / year
Total Defensible Space Support^{1,2}	\$1,182,000 / year

¹ Described within “10-Year Plan” Fuel reduction Strategy. It is noted by the Commission that the “10-Year Plan” for fuel reduction projects in the Lake Tahoe Basin is a strategic document and that fuels project locations, treatment prescriptions, and implementation methods may change as tactical plans are developed. Therefore, the Commission’s funding estimates do not purport to address funding needs of all worthwhile fuels projects in the Basin, and additional funding for such projects should be anticipated as such strategies are developed.

² The above staffing funding will implement establishing defensible space on approximately 8,000 privately owned urban parcels per year. This program, representing an additional 6500 defensible space inspections yearly, will require estimated aggregate expenditures of approximately \$12 million per year by the owners of the privately owned parcels.

2) It is recommended that the Lake Tahoe Basin Fire Chiefs form a Joint Powers Authority to coordinate the stop gap funding provided by the State of California and the State of Nevada, and to coordinate long term maintenance of fuel reduction project areas and community defensible space.

3) It is recommended that the TRPA manage the database and GIS components of the fire management system and that the Lake Tahoe Fire agencies would perform management oversight of this work through the JPA.

4) It is recommended that the Lake Tahoe Fire Chiefs find more stable, long-term funding to replace the stop gap funding provided by the States, likely through the collection of a parcel fee or similar special assessments on property owners.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED:

- Cost - \$1,000,000 immediate funding and \$1,782,000 yearly for a period of three years.
- Funding source – The States of California and Nevada
- Staffing – As identified above
- Existing regulations and/or laws – No change necessary

Attachment to Finding 46

Explanation of Expense Items for Finding 46 and Recommendation 84

The purpose of this document is to detail the funding estimates in Finding 46 and Recommendation 84. The amounts are estimates and actual costs may be different.

Fuel Break Parcel and Project Database (One time) \$500,000

The fuel break and parcel level database costs are based on a bid for development as provided by the Tahoe Integrated Information Management System (TIIMS) staff at TRPA.

The TRPA's TIIMS system will be utilized to warehouse and display all project data for the Basin. Each land manager will provide geospatial data to TIIMS and the data will be displayed through a web interface. In this way the public will have information on where projects have been completed, are in progress, or planned.

The defensible space database will be developed by the database manager at TRPA and was considered in the cost estimate for the fuels reduction database provided by TRPA staff. This database will be used to track defensible space treatments, parcels where enforcement action may be necessary, and could provide information on defensible homes to firefighters responding to a catastrophic fire.

Defensible Space Risk Database (One time)	\$500,000
<p>The defensible space risk database costs are based on a bid for development as provided by private contractor and TRPA staff. The risk analysis system will utilize the data captured during defensible space inspections for a web based system to evaluate the hazard to a specific parcel. The web based system will also give homeowners specific instructions on what actions they can take to reduce the hazard to their property.</p>	
Fuels Reduction Project Staff	\$450,000
<p>The fire agencies have identified the need for staff to manage fuels reduction projects on municipal and private properties identified for treatment in the <i>10-Year Fuels Reduction Strategy for the Lake Tahoe Basin</i>. There is a need for a mix of disciplines ranging from manager/director to Registered Professional Forester, GIS Manager, and support staff. It is estimated that the entire employment package will cost \$400,000 per year and that a part-time contract executive director will cost \$50,000 per year.</p>	
Additional Science for Sensitive Land Treatments	\$150,000
<p>Current regulations in the Lake Tahoe Basin do not provide for quantitative standards for soil compaction and soil hydraulic function. The Tahoe Science Consortium and an independent contractor estimate that a robust study to develop quantitative standards would require approximately \$150,000 per year. The study would result in a published document for use by implementers.</p>	
Fuels Reduction of State, Local and Private Lands	\$5 million
<p>The Community Wildfire Protection Plans (CWPPs) for the Lake Tahoe Basin provide goals for fuels reduction on a yearly basis. The CWPPs envision the treatment of approximately 2,000 acres per year on state, local and private property at an estimated cost of \$3,385 per acre. There is current funding available to treat approximately 500 acres per year. The Round 9 SNPLMA application for fuels reduction and defensible space requested \$8.6 million. The application has been reduced to less than \$3.5 million. This level of funding makes it impossible to maintain the work schedule in the 10-Year Fuels Reduction Strategy for the Lake Tahoe Basin or the CWPP's.</p>	
Defensible Space Inspectors	\$300,000
<p>The fire agencies for the Lake Tahoe Basin are currently working to increase their defensible space inspection staffing. The fire agencies have identified a need for a minimum of 10 seasonal inspectors to complete eight inspections per day for 100 field days. This level of effort would complete the defensible space inspections in five years for the entire Basin. This estimate includes personnel costs, equipment, and operational costs.</p>	
Defensible Space Project Coordination	\$350,000
<p>The Fire Safe Council currently employs three full-time staff, two project coordinators and an administrative assistant, and is currently working to hire a full-time coordinator for the north shore of Lake Tahoe. The project coordinators manage community organizations that build momentum in communities. Then when the community is ready, the coordinators take multiple properties out to bid and greatly reduce the cost of the defensible space treatments. Because cost is a primary impediment to completing defensible space, this effort increases compliance. Each project coordinator is paid \$60,000 per year with a 25 percent burden for benefits, payroll taxes, unemployment insurance, and workers compensation. The administrative staff is paid \$40,000 per year with the same burden as described above. Travel costs are approximately \$500 per</p>	

month, per coordinator. Office rents and utilities are approximately \$3,000 per month. The current year budget for computer equipment and supplies is \$10,000 and is typical of prior years.

Fuels and Defensible Space Database Management **\$282,000**

The defensible space, forestry and risk hazard web programs will cost approximately \$282,000 per year to maintain. This was calculated by the TIIMS coordinators at the TRPA. There are two primary components to this cost. First, home ownership data is collected from five county tax assessors annually. The data must then be “normalized” or made compatible. This is a full time job. Second, web site maintenance, hardware maintenance, a T-1 line dedicated to the website and professional programmers compose the balance of the bid.

Public Outreach **\$250,000**

The rules on what homeowners can do to complete defensible space on their property have significantly changed. Currently second home ownership in the Basin is estimated at 75 percent and therefore only direct mail campaigns are truly effective. During the summer a minimum of six educational events are held each year to show homeowners exactly what needs to be done on a property. The direct mail campaign will cost approximately five dollars per residential property. Printing costs, supplies and advertising are estimated at \$15,000 per year for the six educational events. Labor costs to complete fuels treatments during the events are estimated to be \$12,000 per year representing a ten person hand-crew for a day per event.

Finding 47

Requests for funding or approval of fuels treatment projects within the Tahoe Basin WUI should be given first priority by all funding sources, permitting agencies, and land managers in order to obtain maximum protection of the public's safety and property from catastrophic fire.

Background and Supporting Evidence:

There are many fuel reduction projects to be performed within the Tahoe Basin, and virtually all areas of the Tahoe Basin are in need of such treatments. However, resources are scarce, and in some cases, the application of such resources must be prioritized. The permitting process relevant to such projects is cumbersome in many cases, and prone to delay. Accordingly, it is necessary to express a priority to those treatments that will most directly affect the protection of life and property.

Recommendation:

It is recommended that all permitting agencies within the Tahoe Basin, all funding sources available for fuel treatment projects within the Basin, and all land managers within the Tahoe Basin assign as their respective first priority for action fuel treatment projects most likely to protect life, property, and the environment in that order. To the extent this may require regulatory procedures to be expedited, they should be to the maximum extent possible.

Impacts of Implementation:

- Cost / No additional costs are imposed by this determination of priority.
- Funding source / Not applicable
- Staffing / Not Applicable
- Existing regulations and/or laws / Not applicable

Finding 48

There is a need to provide for local funding of fire prevention and fire safety projects in the wildland urban interfaces areas of the Tahoe Basin by the various counties and cities within the Basin. Special Assessment Districts or other similar funding mechanisms should be created and put in place to address fire prevention and fire safety funding matters.

Background and Supporting Evidence:

Several of the local governments in the Basin have successfully implemented local funding mechanisms for fire safety and prevention projects. Similar funding mechanisms should be considered by all local governmental authorities in the Basin and, if necessary, the States of California and Nevada should provide specific authority for such funding methods by State law. Nevada law, as set forth in NRS Chapter 271, provides authority for such special assessment districts for certain “local improvements”, but does not specifically identify fire prevention and fire safety as permissible projects for such funding activities. It may be necessary for the Nevada Legislature to adopt suitable legislative amendments to specifically provide for special assessments on the Nevada side of the Lake for fire safety and fire prevention matters within the wildland urban interface areas of the communities in the Basin.

Recommendation(s)

It is recommended that the States of Nevada and California review their statutes to assure that adequate statutory authority exists to permit the imposition of such special assessment districts and, if necessary, adopt such legislation as may be reasonably necessary to authorize such local funding mechanisms in the Tahoe Basin area for fire safety and fire prevention needs.

It is recommended that all local governmental entities within the Tahoe Basin, including all of the counties and city governments in the Basin, consider the implementation of special assessment districts or similar funding mechanisms, for the collection of funds for fire safety and fire prevention activities in the wildland urban interface (WUI) areas within and surrounding the communities in the Tahoe Basin.

Impacts of Implementation: (The implementation of any Recommendation is likely to have specific impacts. Consider potential consequences related to each of the following areas):

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

- Cost / The costs of implementing these recommendations is not readily available, but it is believed they could be covered by existing public safety and legislative budgets.
- Funding source / Local governments and the States of California and Nevada.
- Staffing / to be determined
- Existing regulations and/or laws / May require amendments to existing laws.

Appendix E

Suggested Implementation Schedule of Recommendations

After review of the 90 Recommendations made by the Commission, the following time-lines are suggested for Recommendation implementation. This schedule is based on the best estimate of what is possible and needed to effectively address the extreme wildfire risk to Lake Tahoe Basin:

IMPLEMENTATION ACTION ITEMS

Recommendations for *Immediate Implementation*

Rec #	Summary Description of Recommendation(s)
1, 2, 3, 5	Environmental, management, and research policy statements
6	Initiate literature review - Tahoe Science Consortium
7	Initiate Fuels Monitoring and Assessment Program
8	Develop third party monitoring
9, 10, 12	Emergency Declaration and wildfire risk
11, 14	Commission extended to monitor implementation, recommended members
13	Distribution list for final report
15, 54, 55	Ten year plan implemented, annual update, cooperative projects
17A	Interim solution (2008 fire season) to equipment in SEZs
17B	Agencies initiate development of standard equipment BMPs
17G	Up to 14" trees permit exempt (adopted by TRPA)
17L	Initiate research/monitoring lessons into project design, monitoring
19	TRPA – Fire Chief's 9-points adopted
20	TRPA – Establish fire input on Board/APC
21, 22	TRPA – Fire policy reporting duties
32	LRWQCB Executive Director letter to TRPA clarifying MOU
34	LRWQCB expand category 1A waiver, urban publicly-owned lots
35	TRPA – expand MOUs publicly-owned parcels maintenance
37	Basin agencies adopt single Defensible Space guidelines
38, 39, 41	Defensible Space outreach, public education initiated
40, 44, 45, 46, 47	Introduction of local ordinances, pursue grants/loans
48	CAL FIRE - Fire Prevention Inspectors
50	Angora burn area restoration
54	Support of Multi-Jurisdictional Ten Year plan
55	Coordinated fuels projects SNPLMA grants
69	Agencies adopt fire hazard priority for equipment use
70	LRWQCB interpretation of SEZs pile burning
72	Monitoring permit conditions and duties revisions
73	TRPA – revised small urban lots definition
74	CA and NV adopt priorities: life, property, environment
75, 76	CAL FIRE 2008 fire season staffing and feasibility study
77	USFS/Local joint fire station staffing
78	NV C-130 National Guard proposal
79, 81	Fire agencies agreements, dispatch communications, operating plan
82, 83	Initiate Federal legislative action plan
87	Initiate actions, local agencies revenue sources, replace interim funding
88	CA and NV statutory research for local funding support
89	Basin agencies adopt first priority action fuels treatments, priorities
90	TRPA supplemental budget request

Recommendations to Implement by October, 2008

Rec #	Summary Description of Recommendation(s)
16	TRPA/LRWQCB Fuels Policy Update
17C, D	SEZs definition, mapping
17F	Single environmental process
17H	Over the snow waiver category 1B, 1C adopted
17I	TRPA/LRWQCB amendments, 1A waiver hand thinning
17J	TRPA/LRWQCB/USFS amend plan, ordinances over 30% slopes
17K	TRPA/LRWQCB amendments pile burning, chip materials, SEZs
18	TRPA ordinance and procedures reviewed and modified as needed
24, 25	TRPA/LRWQCB MOUs with USFS updates completed
26, 27, 28	TRPA/LRWQCB MOU
29	CAL FIRE report on LRWQCB/TRPA MOU
31	USFS Region 5, PSW Research - soil standards and protocols
49	Initiate Basin-wide water infrastructure deficiency study
51	USFS urban lots, revised steep slopes standard
52, 53	TRPA fuels project regulatory changes and conservation plan
56	Biomass feasibility study and operational proposals
57	Firewood uses in Basin
58, 59, 60, 61, 62, 63, 64, 65, 66	Prescribed burn and air quality guidelines
67	TRPA/LRWQCB temporary roads regulatory changes
68	TRPA - 208 amendment
84	Local and State Defensible Space long-term funding
85	Joint Powers Authority between Lake Tahoe Basin Fire Chiefs completed
86	TRPA/Fire Agencies database and GIS programs

Recommendations to Implement by June, 2009

Rec #	Summary Description of Recommendation(s)
4	CA and NV biomass economic incentives proposals
6	Tahoe Science Consortium literature review completed
7	Complete Fuels Monitoring and Assessment Program
8	Implement third party monitoring
17B, E	Equipment handbook completed, exemptions adopted
17L	Adopt revised science, project design, monitoring requirements
23	CA and NV Legislatures - TRPA budget review policies
30	CA and NV State Forester progress report - permit streamlining
33, 36, 43	Introduce CA legislation, Public Resource Code (PRC) amendments
40, 44, 45, 46, 47	Local Defensible Space ordinances adopted
42	Defensible Space tree marking guidelines
49	Completion of Basin-wide water infrastructure deficiency study
71	Complete Basin <i>Handbook of Forestry Practices</i>
75, 76, 77, 78	Completion of CAL FIRE Level of Service feasibility study
87	Completion of local agencies revenue sources, replace interim funding
88	CA and NV statutory research for local funding support

RECOMMENDED ACTIONS SPECIFIC TO THE TAHOE REGIONAL PLANNING AGENCY

Recommendations for Immediate Implementation

Rec #	Summary Description of Recommendation(s)
6	Leadership initiating science review
7	Initiate Fuels Monitoring and Assessment Program
8	Develop third party monitoring
17A	Interim equipment in SEZs solution
17B	Initiate handbook
17G	14" trees, adopted
17L	Leadership initiating research/monitoring lessons into design
19	Fire Chiefs 9-points adopted
20	Establish fire input on Board/APC
21, 22	Fire policy reporting duties
35	Expand MOUs publicly-owned parcels maintenance
37	Adopt single Defensible Space guidelines
50	Angora burn area restoration
69	Adopt fire hazard priority for equipment use
72	Monitoring permit conditions and duties revisions
73	Revised small urban lot definition
82, 83	Assist, Federal legislative action plan
89	Adopt first priority action fuels treatments, priorities
90	Submit supplemental budget

Recommendations to Implement by October, 2008

Rec #	Summary Description of Recommendation(s)
16	Updated fuels policies
17C, D	SEZ definitions, mapping
17F	Single environmental process
17I	Hand thinning 1A waiver
17J	30% slopes amendment
17K	SEZs pile burning, chipped materials
18	Ordinance, procedures review, amendments
24	USFS MOU
26, 27, 28	LRWQCB MOU
52, 53	Vegetation removal, conservation plan
56	Biomass feasibility study and operational proposals
67	Temporary road access changes
68	208 amendments

Recommendations to Implement by June, 2009

Rec #	Summary Description of Recommendation(s)
6	Tahoe Science Consortium literature review completed
7	Complete Fuels Monitoring and Assessment Program
8	Implement third party monitoring
17B, F	Equipment handbook, exemptions adopted
17L	Adopted revised science, project design, monitoring requirements

RECOMMENDED ACTIONS SPECIFIC TO THE LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD

Recommendations for *Immediate Implementation*

Rec #	Summary Description of Recommendation(s)
17A	Interim solution (2008 fire season) to equipment in SEZs
17B	Participate in handbook development process
17L	Participate in revised science, project design, monitoring
32	Executive Director letter to TRPA clarifying MOU
34	Expanded category 1A waiver, publicly-owned lot
37	Defensible Space guidelines
69	Adopt fire hazard priority for equipment use
69	Adopt fire hazard priority, equipment use
69	Adopt fire hazard priority, equipment use
72	Monitoring permit conditions and duties revisions
89	Adopt first priority action fuels treatments, priorities

Recommendations to Implement by October, 2008

Rec #	Summary Description of Recommendations(s)
16	Updated fuels policies
17C, D	SEZs definitions, mapping
17F	Single environmental process
17H	Over the snow waiver
17I	Hand thinning 1A waiver
17J	30% slopes amendment
17K	SEZs pile burning, chipped materials
25	USFS MOU
26, 27, 28	TRPA MOU
56	Biomass feasibility study and operational proposals
67	Temporary road access changes

Recommendations to Implement by June, 2009

Rec #	Summary Description of Recommendation(s)
	<i>Based on TRPA MOU, no further actions should be necessary</i>

RECOMMENDED ACTIONS SPECIFIC TO USDA FOREST SERVICE-LAKE TAHOE BASIN MANAGEMENT UNIT

Recommendations for *Immediate Implementation*

Rec #	Summary Description of Recommendations(s)
15, 54, 55	Ten year plan implemented, annual update, cooperative projects
79, 80, 81	Fire agencies agreements, dispatch communications, operating plan

Recommendations to Implement by October, 2008

Rec #	Summary Description of Recommendation(s)
24, 25	MOUs with TRPA/LRWQCB
31	USFS Region 5, PSW Research - soil standards and protocols
51	USFS urban lots, revised steep slopes standard
58, 59, 60, 61, 62,	Prescribed burn and air quality guidelines
63, 64, 65, 66	

RECOMMENDED ACTIONS SPECIFIC TO LOCAL GOVERNMENTS

Recommendations for *Immediate Implementation*

Rec #	Summary Description of Recommendation(s)
15, 54, 55	Ten year plan implemented, annual update, cooperative projects
38, 39, 41	Defensible Space outreach, public education initiated
40, 44, 24, 46, 47	Introduction of local ordinances, pursue grant programs
79, 80, 81	Fire agencies agreements, dispatch communications, operating plan
82, 83	Assist, Federal legislative action plan
87	Initiate actions, local agencies revenue sources, replace interim funding

Recommendations to Implement by October, 2008

Rec #	Summary Description of Recommendation(s)
40, 44, 45, 46, 47	Local defensible space and ordinances proposed.
49	Initiate Basin-wide water infrastructure deficiency study
56	Biomass feasibility study, access regulatory changes
58, 59, 60, 61, 62,	Prescribed burn and air quality guidelines
63, 64, 65, 66	

Recommendations to Implement by June, 2009

Rec #	Summary Description of Recommendation(s)
49	Completion of basin-wide water infrastructure deficiency study
87	Completion of local agencies revenue sources, replace interim funding

RECOMMENDED ACTIONS FOR EXECUTIVE, LEGISLATIVE, AND/OR BUDGET

Recommendations to Implement by June 1, 2008, or as soon as feasible

Rec #	Summary Description of Recommendation(s)
1, 2, 3, 5	Environmental, management, research policy statements
9, 10, 12	Emergency Declaration and wildfire risk
11, 14	Commission extended to monitor implementation, recommended members
13	Distribution list for final report
50	Angora burn area restoration
75, 76	CAL FIRE 2008 fire season staffing and feasibility study
77	USFS/Local joint fire station staffing
78	NV C-130 National Guard proposal
82, 83	Initiate Federal Legislative action plan

Recommendations to Implement after January 1, 2009, or as soon as feasible

Rec #	Summary Description of Recommendation(s)
2, 22, 23	TRPA added duties, budget review policies
33, 36, 43	Introduce CA legislation, Public Resource Code (PRC) amendments
58, 59, 60, 61, 62,	Prescribed burn and air quality guidelines
63, 64, 65, 66	
75, 76	Completed CAL FIRE - fire season staffing and feasibility study
77	USFS/Local joint fire station staffing
78	NV C-130 National Guard proposal
82, 83	Federal Legislative action plan
88	CA and NV statutory research, identify options, legislative needs

Appendix F

Costs Summary

The table below is excerpted from the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy – 10 Year Plan* (http://www.fs.fed.us/r5/lbmu/documents/fuel-reduction-projects/10-year-plan/LTB_FUELS_PLAN_12_13_2007.pdf). It describes the acres that are currently planned for fuels treatment and the estimated project costs.

Lake Tahoe Basin Fuel Reduction and Wildfire Prevention Strategy¹

Cost Item		Acres	Cost
CWPPs² (acres by jurisdiction)	Federal	6,552	\$ 25,280,736
	California	2,293	\$ 19,957,600 *
	Nevada	75	\$ 289,386
	Local	1,150	\$ 4,437,248
	Private	2,408	\$ 9,291,211
CWPP Subtotal		12,478	\$ 59,256,180 *
Community Defense Programs			\$ 9,983,000
Program Leadership/Staffing			\$ 43,088,587
LTBMU Other Acres		33,260	\$ 96,972,685
Nevada Other Acres		3,100	\$ 9,028,750
Maintenance		18,100	\$ 10,283,842
Total			\$228,613,042 *
*Reflects revised cost estimate for CTC not in original report			

Private Homeowner Parcels – There are approximately 40,000 homes in the Tahoe Basin with an average one-time cost to fully comply with defensible space requirements at \$1,500 per parcel. A percentage of these parcels have already created defensible space while others remain to be completed. An additional building/homeowner expense would be the conversion of wood shake roofs to non-combustible roof materials.

Local Government – There is a cost associated with the delivery of public education and defensible space inspection services. Local funding will need to be provided to fire agencies to deliver these necessary services.

¹ *The TRPA Plan projected cost* (Holl 2007)

² CWPP: *Community Wildfire Protection Plans* as defined by the Healthy Forests Restoration Act, 2003

Explanation of Expense Items for Finding 46 and Recommendation 84

The purpose of this document is to detail the funding estimates in Finding 46 and Recommendation 84. The amounts are estimates and actual costs may be different.

Fuel Break Parcel and Project Database (One time) \$500,000

The fuel break and parcel level database costs are based on a bid for development as provided by the Tahoe Integrated Information Management System (TIIMS) staff at TRPA.

The TRPA's TIIMS system will be utilized to warehouse and display all project data for the Basin. Each land manager will provide geospatial data to TIIMS and the data will be displayed through a web interface. In this way the public will have information on where projects have been completed, are in progress, or planned.

The defensible space database will be developed by the database manager at TRPA and was considered in the cost estimate for the fuels reduction database provided by TRPA staff. This database will be used to track defensible space treatments, parcels where enforcement action may be necessary, and could provide information on defensible homes to firefighters responding to a catastrophic fire.

Defensible Space Risk Database (One time) \$500,000

The defensible space risk database costs are based on a bid for development as provided by private contractor and TRPA staff. The risk analysis system will utilize the data captured during defensible space inspections for a web based system to evaluate the hazard to a specific parcel. The web based system will also give homeowners specific instructions on what actions they can take to reduce the hazard to their property.

Fuels Reduction Project Staff \$450,000

The fire agencies have identified the need for staff to manage fuels reduction projects on municipal and private properties identified for treatment in the *10-Year Fuels Reduction Strategy for the Lake Tahoe Basin*. There is a need for a mix of disciplines ranging from manager/director to Registered Professional Forester, GIS Manager, and support staff. It is estimated that the entire employment package will cost \$400,000 per year and that a part-time contract executive director will cost \$50,000 per year.

Additional Science for Sensitive Land Treatments \$150,000

Current regulations in the Lake Tahoe Basin do not provide for quantitative standards for soil compaction and soil hydraulic function. The Tahoe Science Consortium and an independent contractor estimate that a robust study to develop quantitative standards would require approximately \$150,000 per year. The study would result in a published document for use by implementers.

Fuels Reduction of State, Local and Private Lands \$5 million

The Community Wildfire Protection Plans (CWPPs) for the Lake Tahoe Basin provide goals for fuels reduction on a yearly basis. The CWPPs envision the treatment of approximately 2,000 acres per year on state, local and private property at an estimated cost of \$3,385 per acre. There is current funding available to treat approximately 500 acres per year. The Round 9 SNPLMA application for fuels reduction and defensible space requested \$8.6 million. The application has been reduced to less than \$3.5 million. This level of funding makes it impossible to maintain the work schedule in the 10-Year Fuels Reduction Strategy for the Lake Tahoe Basin or the CWPPs.

Defensible Space Inspectors **\$300,000**

The fire agencies for the Lake Tahoe Basin are currently working to increase their defensible space inspection staffing. The fire agencies have identified a need for a minimum of 10 seasonal inspectors to complete eight inspections per day for 100 field days. This level of effort would complete the defensible space inspections in five years for the entire Basin. This estimate includes personnel costs, equipment, and operational costs.

Defensible Space Project Coordination **\$350,000**

The Fire Safe Council currently employs three full-time staff, two project coordinators and an administrative assistant, and is currently working to hire a full-time coordinator for the north shore of Lake Tahoe. The project coordinators manage community organizations that build momentum in communities. Then when the community is ready, the coordinators take multiple properties out to bid and greatly reduce the cost of the defensible space treatments. Because cost is a primary impediment to completing defensible space, this effort increases compliance. Each project coordinator is paid \$60,000 per year with a 25 percent burden for benefits, payroll taxes, unemployment insurance, and workers compensation. The administrative staff is paid \$40,000 per year with the same burden as described above. Travel costs are approximately \$500 per month, per coordinator. Office rents and utilities are approximately \$3,000 per month. The current year budget for computer equipment and supplies is \$10,000 and is typical of prior years.

Fuels and Defensible Space Database Management **\$282,000**

The defensible space, forestry and risk hazard web programs will cost approximately \$282,000 per year to maintain. This was calculated by the TIIMS coordinators at the TRPA. There are two primary components to this cost. First, home ownership data is collected from five county tax assessors annually. The data must then be "normalized" or made compatible. This is a full time job. Second, web site maintenance, hardware maintenance, a T-1 line dedicated to the website and professional programmers compose the balance of the bid.

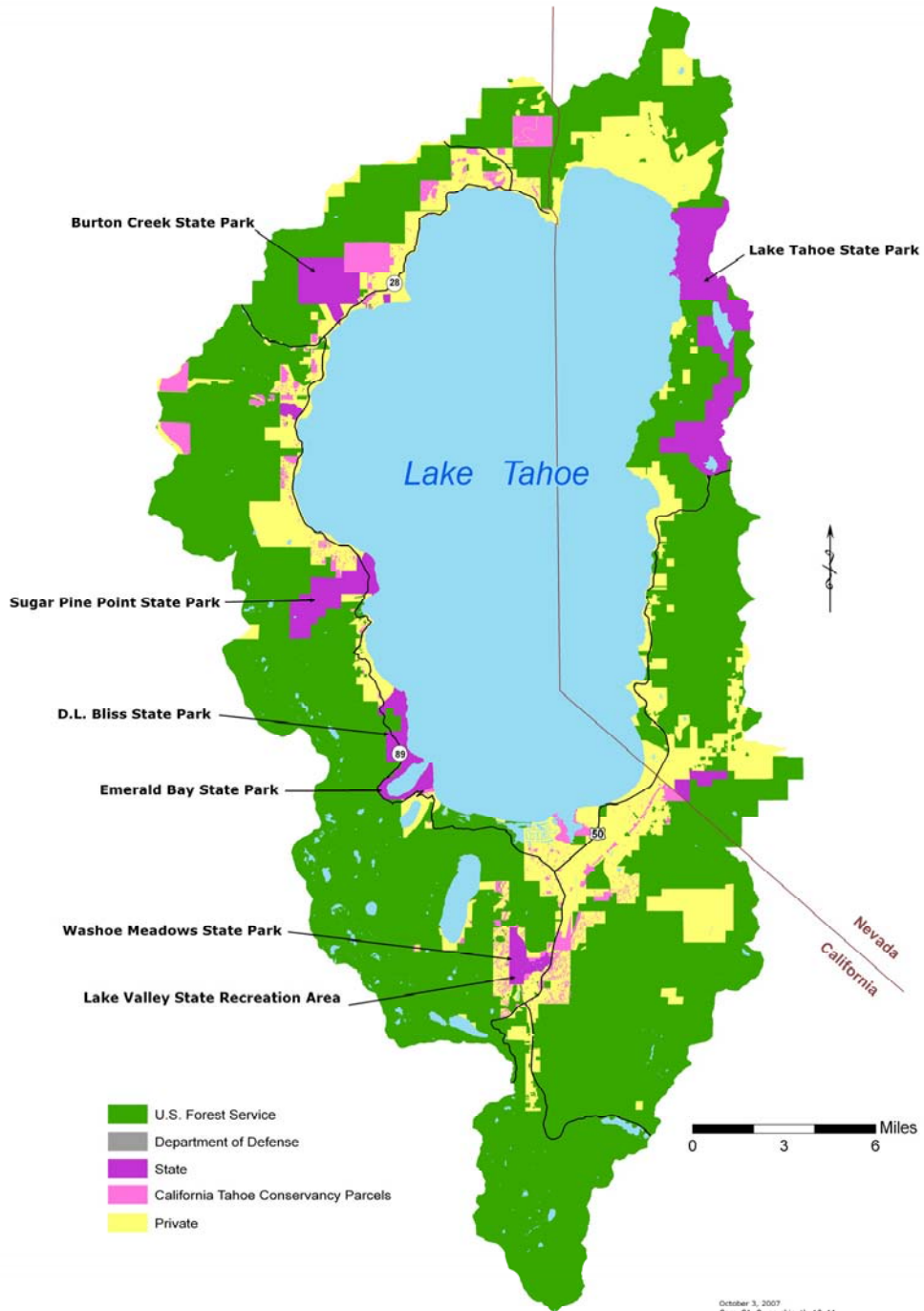
Public Outreach **\$250,000**

The rules on what homeowners can do to complete defensible space on their property have significantly changed. Currently second home ownership in the Basin is estimated at 75 percent and therefore only direct mail campaigns are truly effective. During the summer a minimum of six educational events are held each year to show homeowners exactly what needs to be done on a property. The direct mail campaign will cost approximately five dollars per residential property. Printing costs, supplies and advertising are estimated at \$15,000 per year for the six educational events. Labor costs to complete fuels treatments during the events are estimated to be \$12,000 per year representing a ten person hand-crew for a day per event.

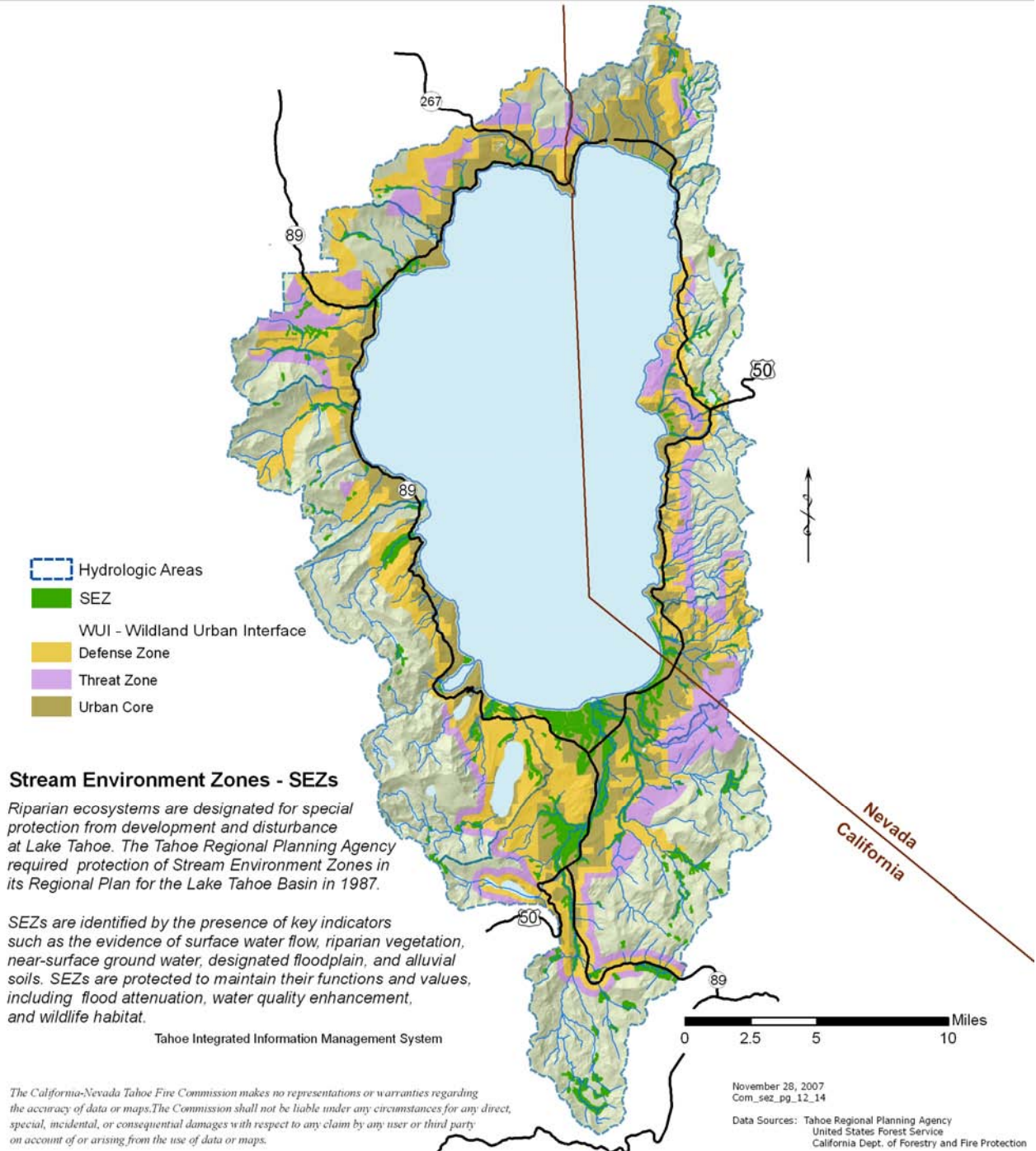
Appendix G

Maps

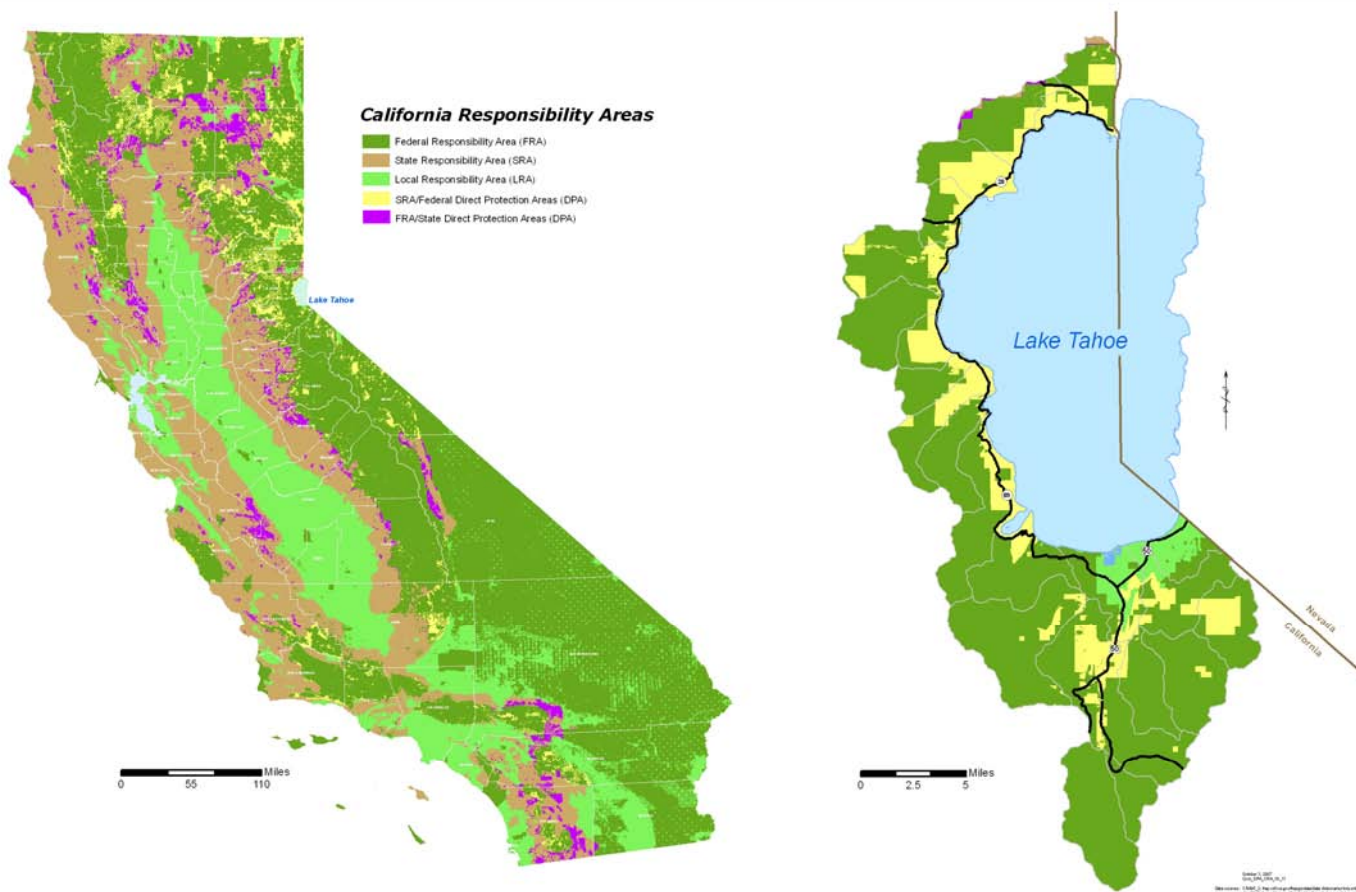
Lake Tahoe Basin Ownership



SEZ - Stream Environment Zones



Fire Protection in California



Prevention and Suppression

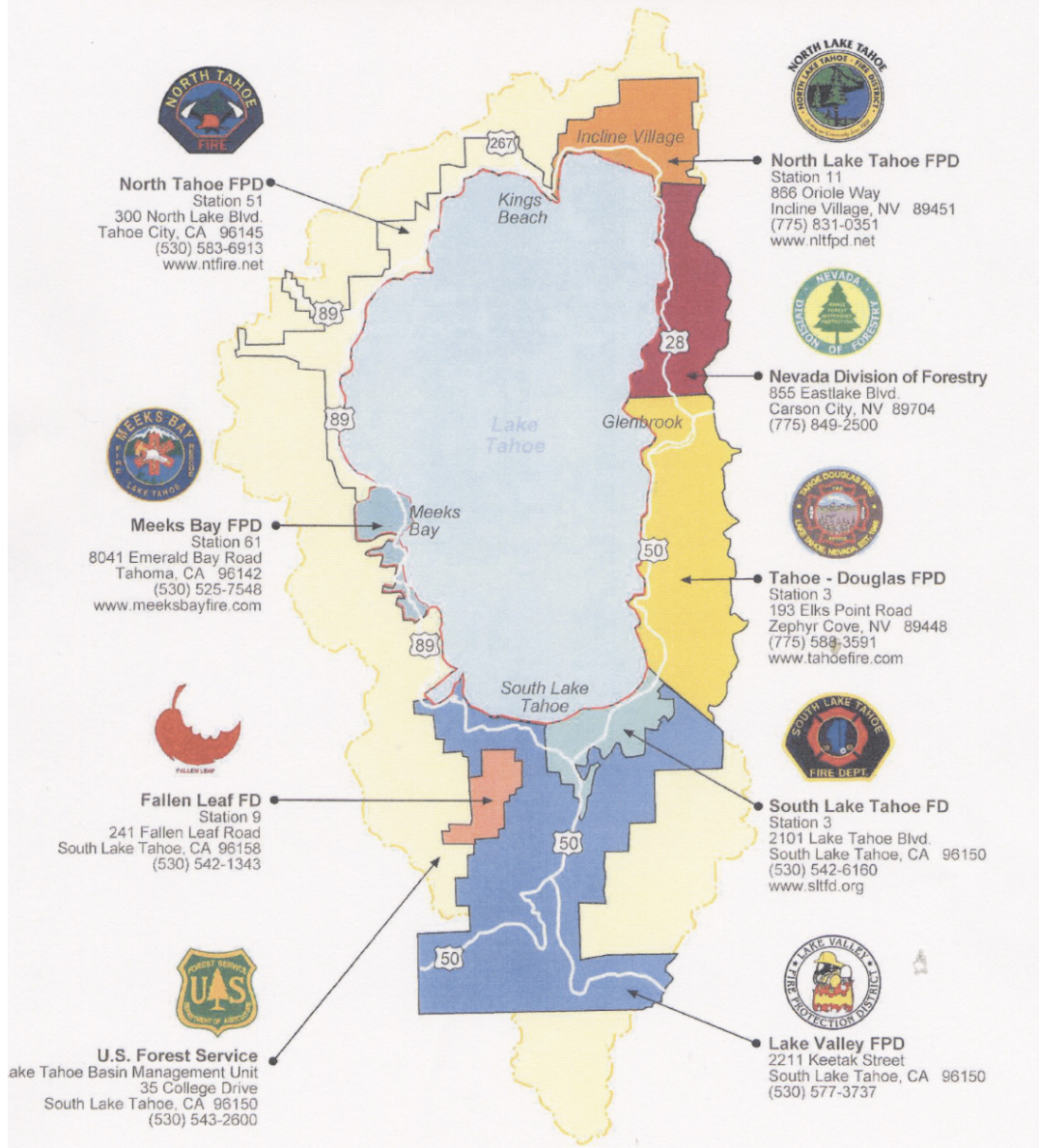
The California Dept. of Forestry and Fire Protection has the legal and financial responsibility to provide fire prevention and suppression on all State Responsibility Area (SRA) lands—which are determined by population density, land use and ownership.

The prevention and suppression of fires in areas not designated State Responsibility Areas are the financial responsibility of local or federal agencies. SRA designations undergo a thorough 5-year review cycle, along with annual updates for incorporations.

The Dept. of Forestry and Fire Protection swaps protection areas with other providers to more efficiently provide protection over a contiguous land base. The resulting lands are called Direct Protection Areas (DPA).

Direct Protection Areas, by law or pursuant to the terms of a cooperative agreement, are provided wildland fire protection by state, local, or federal agencies. DPAs may include a mixture of State, Federal, and Local Responsibility Areas.

Lake Tahoe Basin Fire Protection Agencies



In an Emergency Dial 9-1-1

Appendix H

ACRONYMS

APC	Advisory Planning Commission
BMP	Best Management Practice
CAL FIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CCR	California Code of Regulations
CTC	California Tahoe Conservancy
CWPP	Community Wildfire Protection Plan
F&Rs	Findings and Recommendations
GASC	Geographic Area Coordination Center
GHG	Green House Gas
GIS	Geographical Information System
LTB	Lake Tahoe Basin
LTBMU	Lake Tahoe Basin Management Unit
LRWQCB	Lahontan Regional Water Quality Control Board
MAA	Management Agency Agreement
MAC	Multi-agency coordination
MOU	Memorandum of Understanding
NDEP	Nevada Division of Environmental Protection
NDF	Nevada Division of Forestry
NRS	Nevad Revised Statute
PM	Particulate Matter
PRC	California Public Resources Code
SEZ	Stream Environment Zone
SNPLMA	Southern Nevada Public Lands Management Act
TFFT	Tahoe Fire and Fuels Team
TIIMS	Tahoe Integrated Information Management System
TMDL	Total Maximum Daily Load
TRPA	Tahoe Regional Planning Agency
TSC	Tahoe Science Consortium
USDA	United States Department of Agriculture
WUI	Wildland-Urban Interface

